Preface

Sincerely thank you for selecting our product, and we are dedicated to offering you the best service.

This user manual is applicable to DVR7000 series machine, which takes DVR7008 (8 channel machine of DVR7000 series) for example. Different models have some slight differences in configurations, as well as the production functions and operations.

The content of this user manual is for reference only, updates of which are subject to change without prior notice; The updates will be added in the new edition of this manual, simultaneously posted in the download center of company's website. This manual may contain technical inaccuracies or misprints, your suggestions or feedbacks are sincerely welcome so that we could enrich and improve in the subsequent edition.

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Chapter 1 Brief Introduction about the DVR

1.1 Summarization

DVR7000 series Digital Video Recorders are designed for video/audio digital surveillance system. They adopt H.264 compress format, integrate embedded RTOS and processor to realize all of the functions like video and audio acquisition and compression, storing, remote control, Multi-PTZ control and alarm in a single board. This series DVR achieves the integrate host to a single plate structure, which ensures the system's high-integration and reliability.

DVR7000 series adopt streaming media file system named MFS, the innovation of which is based on Microsoft FAT32, applicable to dedicated DVR file system, It won't create disk fragmentation after a long run, with a logical streaming media operation and fast respond. Also it adds the key information verify protection to avoid the HDD damage to key areas.

Our products can not only work independently but also connect into a strong monitoring network, which is applicable to banking/telecom/electricity/transportation/intelligent residence/factory/warehouse and many other various areas.

Chapter 2 Technology Guideline and Main Functions

2.1 Technology Guideline

1. Video Parameters
Video input: composite video input PAL(25fps) NTFS(30fps) (BNC,1Vp-p,75Ω)
Video output: 1 channel composite video output(BNC,1Vp-p,75Ω)PAL(625line/frame)NTSC(525line/frame)
2. Audio Parameters
Audio input: BNC interface, input resistance:10KΩ, input extent: Vp-p=2.0V LINE
Audio output: BNC interface, input resistance:10KΩ, input extent: Vp-p=2.0V LINE
Voice intercom: input (3.5MM interface, input resistance:10KΩ, input extent:Vp-p=2.0V LINE in/50mV MIC in）
3. Video Compression: Compression arithmetic H.264, Resolution CIF: PAL(352×288) 25fps; NTSC(352×240) 30fps
A few models support Resolution D1: PAL(704×576) 25fps; NTSC(704×480) 30fps
4. Audio Compression: Compression arithmetic G.711A, Audio sampling rate 8K sample/sec., 16bit/sample
5. Code Stream Type: CBR/VBR
6. Operating System: Linux
7. HDD Interface: Support 48bit LBA working mode
8. Alarm Interface
Alarm Input: supporting normal ON/OFF
Alarm Output: normal on, relay output
9. Serial Interface: RS485, supporting network transparent connection & serial keyboard
10. Operation Mode: Multi-functional IR remote control, USB mouse, serial keyboard
11. Backup Interface: USB2.0 interface

12. Network Interface: 10M/100M self-adaption Ethernet interface
13. Power Consumption: ≤6W
14. Power Supply: 220±30%V, 50±3%HZ, 110±20%V, 60±3%HZ optional

2.2 Main Functions

This series DVR adopts high performance RTOS and embedded processor, which meets the need of all the demands of creating surveillance system. Codes are solidified in the FLASH so that system is more stable and reliable to avoid the eternal factors such as virus, therefore the machine could work for long under severe conditions unmannedly.
Note: The following features might differ from below description due to different hardwares and software versions.

◆ **Compression Features**

1. Supporting PAL/NTSC video format signal.
2. Video compression algorithm is H.264.
3. Video and audio signals are compressed into H.264 code streams. Video and audio streams are synchronous when playback; audio recording can be canceled if video is needed only.
4. Audio compression algorithm adopts G.711A, and every video/audio signal is compressed separately in real time, then generate composite compressed code stream. The video and audio stream are synchronous when playback, or setting disable audio with the sampling rate of 8K sample/sec., 16 bit/sample.
5. Supporting dual stream compression: main code stream used for local storing, sub code stream used for image transmission in low-bandwidth network.
6. 6 levels of record quality is available to select. Users can choose according to requirements so that the recording time is long enough.

◆ **Recording Function**

1. Supporting 4 recording modes: manual, schedule, motion and alarm recording.
2. Video motion detection function: 5 sensitive levels available.
3. Supporting screen shield. Up to 4 mask areas can be set in each channel, which supports real-time mask, recording mask and full screen mask.
4. Supporting sensor alarm linkage recording by multiple channels and alarm recalling to PTZ preset point.
5. Monitoring center is able to record real time compression code stream and support to record video and audio into client PC synchronously.
6. The video and audio parameters of each channel are able to set up separately.
7. Supporting channel title superposition and recording time superposition.
8. Supporting multiplex operation and real time recording with operating other functions synchronously .(such as playback, fast forward, slow playback, rewind, network monitor, VOD and remote download)
9. Supporting pre-record feature and pre-record time is 5~30 seconds.
10. Supporting record status inquiry function.

◆ **Playback Functions**

1. Supporting time query, playback by accurate time orientation.
2. Supporting event query, playback by searching category .(all, manual, schedule, motion, alarm)
3. Supporting intuitional video info graphical display & playback.
4. Supporting digital zoom function of playback image.
5. Supporting multi-channel synchronous playback & main/auxiliary channel switch.

◆ **Real time Display Features**

1. Supporting VGA and BNC output.
2. Supporting digital zoom function.
3. Supporting part area or full screen video mask.

4. Supporting video parameter adjustment to every single channel. (brightness, contrast, saturation, chroma, vertical position)
5. Supporting channel auto sequence function.
6. Supporting intercommunication function.

◆ **Storing and Backup Function**

1. Providing specialized USB2.0 backup interface in the back panel.
2. Backup record files through client manager software.
3. Backup record files through windows IE browser.
4. Powerful HDD management function supports formating HDD in normal condition and masking function to damaged sector.

◆ **Alarm Inspection Functions**

1. Local alarm: Manual alarm, video lost alarm, motion detection alarm, sensor alarm, HDD error alarm, high temperature alarm, network disconnection alarm.
2. Remote alarm: video lost alarm, motion detection alarm and sensor alarm are able to transfer to client manager via network.
3. The response time of video lost alarm, motion detection alarm and sensor alarm is less than 3 seconds.
4. Network alarm linkage (alarm signal upload) is alarmed by PC integrated loudspeaker.
5. Video motion detection function: multi-areas can be setup in each channel.
6. Supporting alarm email linkage upload function which can automatically upload the infos (such as channel number, alarm type and snapshot) to the target email box.

◆ **Network Functions**

1. Supporting TCP/IP protocol (including RP, RARP, IP, TCP, PPPOE, DHCP etc.) and dial-up access, auto-redial and DDNS function.
2. Perfect network side control order .(Client manager and IE browser can be used to operate DVR)
3. Supporting Web Server function .(available to access the host via IE browser)
4. User can control PTZ, lens, wiper and so on via internet.

5. Upgrading via network is available which is convenient for user to maintain and upgrade the software.
6. Supporting ftp upgrading.
7. Supporting NTP timing, DDNS and email functions.
8. Supporting remote monitoring via mobile phone.

◆ **Security Guarantee**

1. High performance 32-bit embedded microprocessor and RTOS ensure high real time capability, reliability and stability.
2. Perfect log search function .(including sensor record log, motion detection log, remote login log, record parameter modification log, upgrade log, playback log, system start-up log, backup log)
3. System lock, keystroke lock, password verification, multi-level user authorization.
4. Video lost alarm, motion detection alarm and sensor alarm can be informed via email.
5. Network alarm linkage. (alarm signal can be uploaded)
6. Watchdog function: system detects automatically when abnormal and initialize the system.

◆ **Exploitation Support**

Providing software and SDK of client manager.

Chapter 3 Equipment Installation and Illustration

3.1 Installation Environment and Cautions

Installation Environment

- Normal working temperature is -10℃-45℃, storage temperature is -10℃-70℃
- Normal working humidity is 15%-85%
- The equipment must keep horizontal both in installation and in using
- Keep the equipment away form high temperature or humidity environment
- The distance between DVR and other device (or wall) must be more than 6CM due to heat dissipation
- Do not move DVR between places with high temperature difference to avoid condensing
- Please install lightning arresters in lighting area to avoid stoppage and burnout

Cautions:

- Keep wet hands or wet materials away from power switch or DVR
- Make sure machine and case are grounded to avoid signal interference and static damage(earth interface is on the back panel of machine)
- Keep voltage stable to avoid abnormal power cutoff. Don't turn off machine by disconnecting the master switch directly
- Protect machine from liquid or meter to avoid internal short-circuit and fire breakout
- Install HDD to record or playback
- Termly brush the board and other accessories to avoid short-circuit caused by dust dampness
- Avoid plugging video/audio RS485 interface when the power is on
- Turn off machine by power on/off button on the front panel instead of disconnecting the master switch directly to avoid HDD damage
- The machine is able to scan the entered HDD automatically. The system will prompt user to format if the HDD is new.(The system supports formatting independently without PC)
- Warning: Please do not try to connect DVR HDD to PC if you're non-professional; The illegal operations (including including revising & editing the file name, opening & editing file, copying duplicated data back to DVR etc.) will result in data unidentified and format requirement
- Do not open machine case when the power is on
- Please change HDD when damaged to keep the integrality of the records (HDD error records are in the logbook)

3.1.1 Attentions on Installing Hard Disk

1. High speed hard disks (above 7200 rpm) are recommended
2. The capacity of the single hard disk is above 32GB at least, each HDD supports maximum 2T
   (Note: 3T HDD is only supported by new file system)
3. The selection and calculation for capacity:
   Total capacity = channels number * record time needed (hours) * capacity per hour (M/hour)
   For example: Suppose recording bit rate is CBK 512K (refer to 4.3 for bit rate types),
   the HDD capacity/hour/channel = bit rate (Mbps) * 3600s = 1800MBb = 225MB (1MB=8Mb)

Due to various factors, the calculated result is for reference only. Some slight differences or small errors might exist in the calculation.

Audio recording capacity is about 15MB per camera per hour. In order to save HDD space, audio (except special requirements) is suggested to close.

If you choose CBR recording, then recording date has no association with bit rate option.

(Note: The earliest recorded files will be overwritten when HDD is full.)

4. The accessories such as data line and fastening screws are equipped.

(Note: This series DVR does not support hot swap, please install HDD and connect data line before energized.)

3.2 Package Checking

After opening the box, please check host machine whether there's distortion or damage. If there is, do not use it and contact suppliers in time. Meanwhile, please check all accessories of host machine. Do read the attached instruction books and keep them. (Note: please check packing list to proofread the accessories)

3.3 Device Interface

3.3.1 Video/Audio Connection

Video output: 1 VGA output, 1CVBS output
Audio output cautions: Please use 3.5mm two-port lotus line if you want to connect speakers.

3.3.2 USB Backup Interface

The form of backup USB disk is FAT32. Please enter "Disk Management" if you want to format (Refer to "Disk Management" operating instructions for the operations in detail). For the operations of USB disk backup, please refer to "Backup Operation" operating instructions.

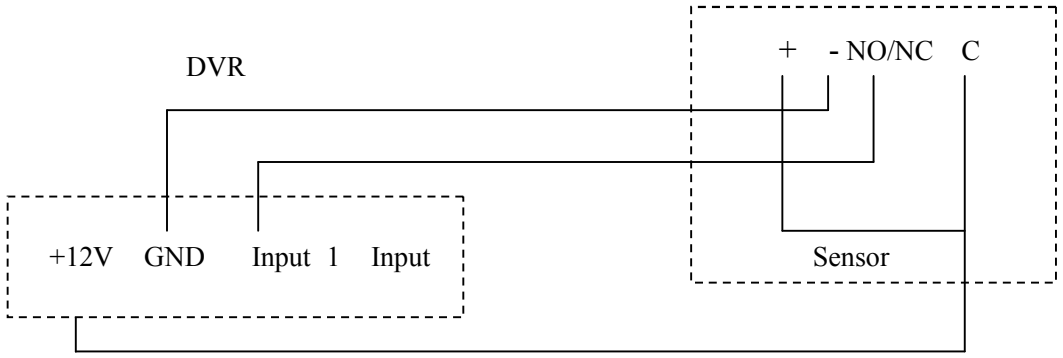
3.3.3 Network Interface

RJ45 10M/100M adaptive Ethernet interface is equipped on the machine to connect with PC. The ACT and LINK indicator lights are used to indicate current network status.

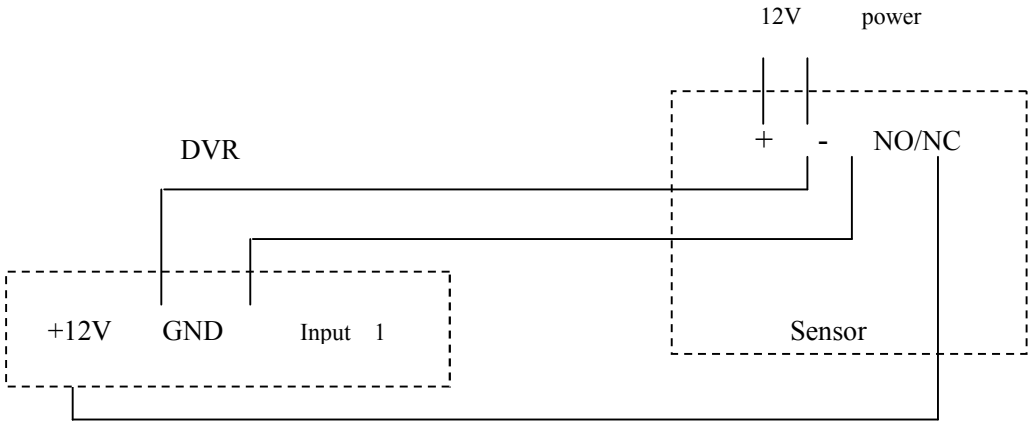
LINK (Network speed indicator) On--100M Off-10M
ACT (Send/Receive data indicator) Flickering--Send/Receiving data
Note: Please use cross wire if connecting DVR with network card of computer, use straight-through line if connecting DVR with computer via router.

3.3.4 Alarm Input/Output Connection

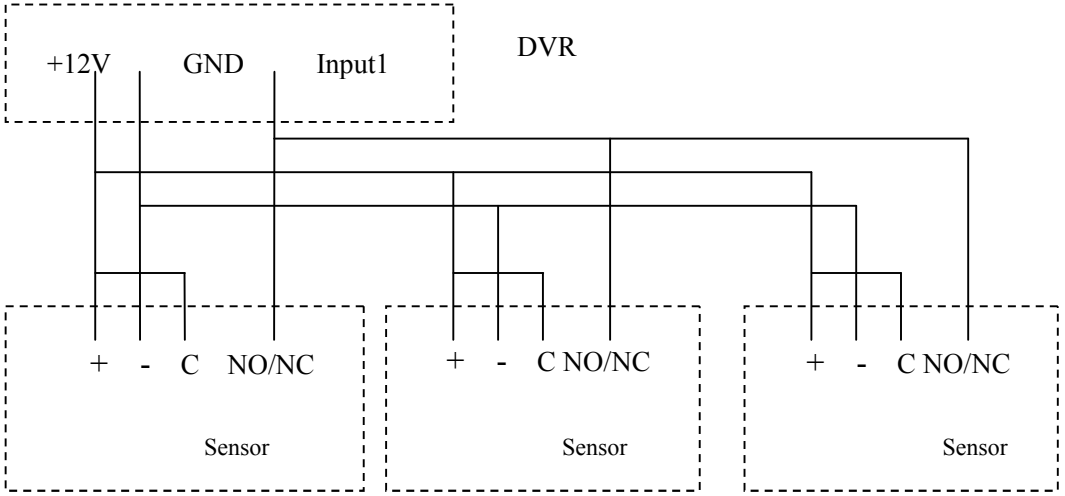
Alarm input: input resistance impedance 22KΩ, voltage comparison (0V-0.8V)
(Instruction: When the voltage between GND and output is in the interval of 0V-0.8V, the machine won't alarm;
When the voltage is above 0.8V, the machine will alarm)
Alarm output: relay (120VAC/1A, 24VDC/1A), Normal (relay open), Alarm (relay closed)
Sensor power: the machine provides a +12V DC power output port.
1. Alarm sensor connection:
Alarm input: physical connections mode of normal on/off are the same. User can select normal on/off alarm input mode in the settings of DVR.
Typical alarm connection: sensor power supply is provided by DVR.



Note: unoccupied alarm input port should be turned off in the software.
The sensor requires a separate power supply if the distance between the sensor and the DVR.

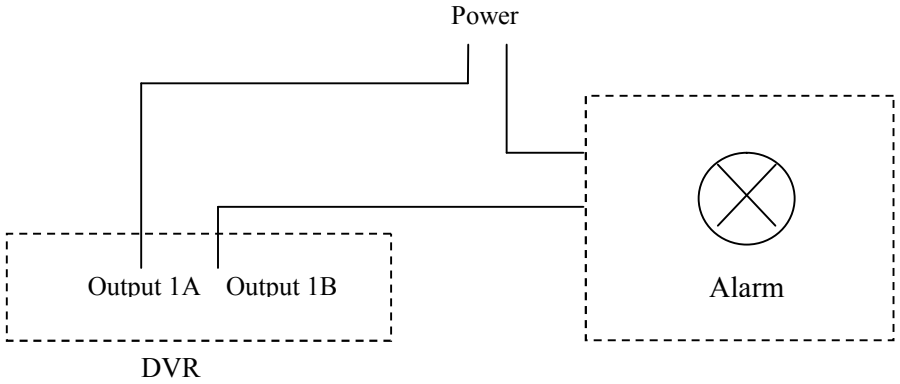


The DVR can not recognize the triggered if the sensor is parallel connected.



2. Alarm output connection:

Normally, the alarm output side is off and without voltage output . So the alarm equipments need separated power supply to work.



Normally, alarm power is very high. Instead of DVR power supply, separated power supply is recommended. The power limit of the external alarm is 120V/AC, 24V/DC 1A. Mainboard will be damaged above this power limit.

3.3.5 RS-485 Connection

Cautions of PTZ decoder connection:

1. Confirm the PTZ decoder and DVR are common grounding, otherwise the possible common mode voltage will cause PTZ invalid.
2. Prevent the access of high-voltage current. Wire reasonably and keep lightning-protection well.

RS485: For controlling PTZ, series keyboard and transparency port connection.

3.3.6 Keyboard Controlling

Series keyboard is used to control single or multiple DVRs (Controlling models with the same channels by keyboard is commended). The function of keyboard is consistent with DVR panel.(Note: the keyboard is only available after adding our protocol and passing our test) Take connecting keyboard to RS485 interface for example:

1. Enter "Main menu" ➔ "System Settings" ➔ "Serial Port Settings" to set serial port type, RS485 serial port number and serial device (serial keyboard).
2. Connect RS485+ port and RS485- port of keyboard to corresponding ports on the back panel of DVR.
3. Connect the power of keyboard.
4. Select "Shift" button to enter DVR mode. The default is "DVR-01", "01" means controlling access address of the keyboard
5. The controlling address code of keyboard: select "Shift" to enable the upward function key, then press "Address/Sure" and enter the host address (corresponding DVR) to realize controlling.
6. The host address code of DVR: Enter “Main menu” ➔ “system settings” ➔ "General Settings" to set the host address code

For the keyboard operations in detail, please refer to keyboard instruction.

3.3.7 Intercommunication Port

MIC intercom port on the back panel of DVR supports active and passive microphones.

3.4 Mouse Operations

Besides remote control and operation menu of the front panel, mouse can also be used to control the DVR.

Right-click：

1. Right-click in the login system to enter the interface as right
2. Right-click to pop up login menu when the DVR is in the locking and monitoring status
Default user name is "admin", default password is "888888"
(Left-click to open soft keyboard and right-click to close it after entering)
3. Right-click to return menu interface after entering menu
4. Right-click soft keyboard to exit after using it

Left-click:

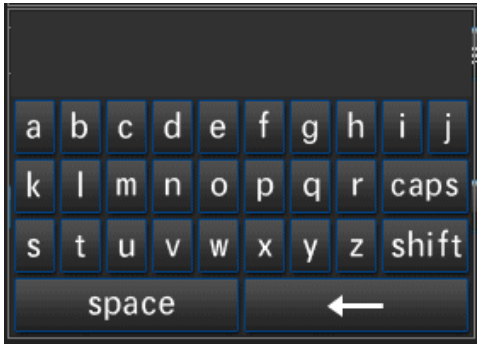
1. Left-click to enter the functional menu
2. In the main menu, left click and choose the item to enter or set the parameters
3. In the settings of Motion Detection, left click and drag the mouse to change the status of the motion detection square unit
4. In the settings of video image parameters, left click to select and change the brightness, contrast, saturation and the hue of the image
5. Left click to enable the soft keyboard (default is English character. Click "Caps" to switch between uppercase and lowercase), continuously left click the buttons on the soft keyboard to switch the keyboard mode (numbers, punctuations, English characters), then input target information

Double left click:

1. Double left lick in the preview interface to switch single picture and multi-picture
2. Double left click to switch main/auxiliary channel in the multi-channel playback interface
3. Double left click to eliminate channel video mask and motion detection mask

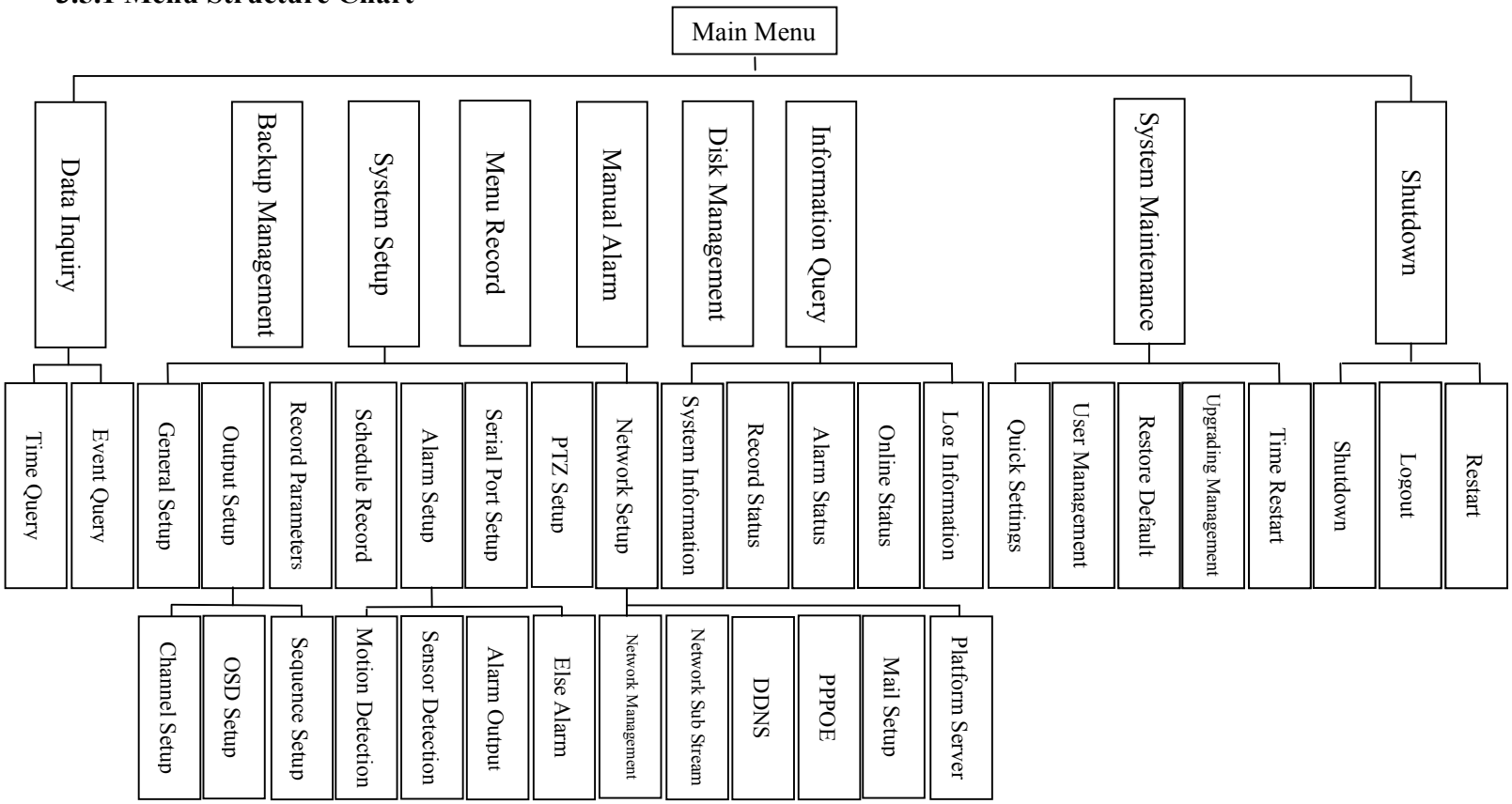
4. Double left click to change the position of PTZ controlling position

Soft keyboard interface as below:



3.5 Menu Operation Description

3.5.1 Menu Structure Chart



3.5.2 Menu Option Schedule

<table>
<tr><td>Menu</td><td colspan="3">Instruction</td></tr>
<tr><td rowspan="2">Data Inquiry</td><td>Time Query</td><td colspan="2">Search record data by time and display graphical data record and playback</td></tr>
<tr><td>Event Query</td><td colspan="2">Search record data and playback by record event type</td></tr>
<tr><td>Backup Management</td><td colspan="3">(Manual, time) backup, search and playback record data</td></tr>
<tr><td rowspan="5">System Setup</td><td>General Setup (Time Setup)</td><td colspan="2">1.Host name, remote control locking enabled, host address code
2.Record coverage type (auto, manual)
3.Video Format (PAL,NTSC)
4.Image resolution: 1280*1024,1024*768
5.Language switch: supporting English
6.Transparency: menu transparency decreasing in turn from 1 to 5
7.Auto lock: 1-10 min optional, shutoff
8.TV dither reducing: dither reducing, enabling startup guidance
9.Time setup: set system time, auto or manual NTP timing via network</td></tr>
<tr><td rowspan="3">Output Setup</td><td>Channel Setup</td><td>1.Setting names of each channel
2.Setting video area mask
3.Channel copying function
4 Video adjustment: brightness, contrast, saturation, hue horizontal adjustment and vertical adjustment
5. Setting display position of each channel</td></tr>
<tr><td>OSD Setup</td><td>Time, channel name, temperature display settings</td></tr>
<tr><td>Sequence Setup</td><td>Setting image sequence. Involving sequence channel, time, sequence mode selectable</td></tr>
<tr><td>Record Parameters</td><td colspan="2">1.Record mode: all, manual, time, motion, alarm
2.Code stream type: CBR, VBR
3.Resolution: CIF/D1 (Only first channel is CIF/D1, the rest are CIF)</td></tr>
</table>

System Setup	Network Setup	DDNS	Select DNS, set user name and password for domain name resolution
		PPPOE	Set dial-up user name and password to dial
		Email Setup	Set server, email user name, password, email address, port number, cycle, snapshot uploading, SSL secure login
		Platform Server	Set monitoring port
Manual Record	Enable channel manual record		
Manual Alarm	Triggering or shutting the alarm when emergent		
Disk Management	Display the status and infos of each disk, USB flash disk, burner. Able to format and check the SMART info of disk		
Information Query	System Info	Device type, software version, SCM version, IP address, physical address of network card, language, resolution	
	Record Status	Display record status of each channel (record mode, image quality, definition, audio)	
	Alarm Status	Display motion alarm, sensor alarm, video lost alarm info, disk error alarm, network disconnection alarm, alarm off of each channel	
	Online Status	Display related online info (online user name, login IP address, login time)	
	Log Information	Inquire system log, display log amount	
System Maintenance	Quick Settings	Quickly set time, network settings, HDD info query and format, local code stream and network code stream, manual record	
	User Management	1.Add/delete users 2.Modify user info and permissions (local permissions and remote permissions). Remote permissions include: remote preview, parameter settings, remote playback, remote backup, log view, voice intercom, remote update, IP/MAC address binding	
	Restore Default	Restore default settings (general settings, output settings, record parameters, time record, alarm settings, network settings, time restart, serial port, PTZ)	
	Upgrading Management	ftp upgrading, USB upgrading	
	Time Restart	Enable time restart function, set restart time	

Shutdown	Logout	Logout
	Shutdown	Shutdown (If you want start up the device, please click startup button on the front panel)
	Restart	Restart device locally

Right Click Menu	Single Picture Switch	Quickly switch single picture
	Multiple Picture Switch	Quickly switch the picture form
	Data Inquiry	Quickly enter to inquire the record data (time query, event query), record data graphical display and playback
	PTZ Controlling	Pop up the interface of PTZ controlling
	Part Zoom	Quickly enter the settings interface of partial screen zoom
	Video Adjustment	Adjustment of video parameters (brightness, contrast, saturation and hue)
	Shutdown	Shutdown (If you want start up the device, please click startup button on the front panel)
	Main Menu	Quickly enter the setting interface of main menu

Chapter 4 Device Operation

4.1 Power On/Off and Login/Lock

Power on: After connecting the power cable, the front panel of the DVR will start and standby. Click "power" of the remote control for 3 seconds to enter the running status.

Power off: When the system is under the running state, click "power" of the remote control or click "power off" on the right click menu to pop up the shutdown interface, click "confirm" button, and the system will be in the standby state.

Login/Lock: To avoid unauthorized using or influence to regular running of the system, we specially set the key lock and unlock function for the machine.

4.1.1 Keystroke Unlock/Lock

When multiple DVRs are placed together to work, remote control may influence other machines which user does not intend to control. To avoid this, we set key lock function corresponding to remote control. In the general setup interface, left click "Enable keystroke lock", input host address and save the settings, exit and click the DN button of the remote control, the host address code will pop up in the interface. Input a different value to enable keystroke lock function. If you want to unlock, press DN button or any other buttons and input related host address code.(Device number range is 0-99, default value is 1).

Note: If remote control is not available, please check whether this function is enabled.

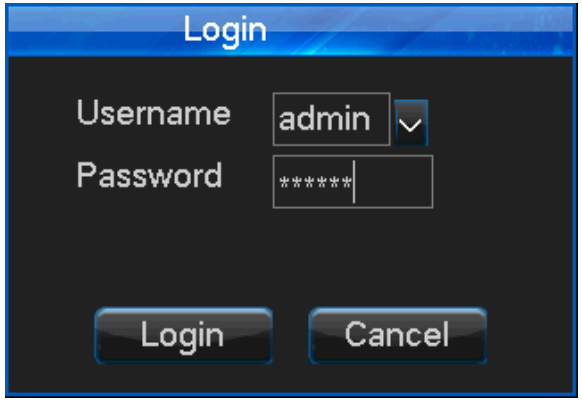
4.1.2 System Login

When the system is in the locking status " ", press "login/lock" of the remote control, click lock icon " " or right click to

pop up login interface as below: input user name and password (distributed by authority in advance). After you input correct password and press "enter" button, system lock icon " " will switch to login icon " " automatically. Then you can operate in authority of the system.

1. Default user name: admin, default password: 888888.
2. When you input incorrect password for continuous 3 time, the system will alarm and get into locking status. After 20 seconds you can login again or click "clear" button of remote control.
3. Left click in the password input dialog box to pop up soft keyboard. Right click to exit soft keyboard after inputting.

Note: For safety, please change default password timely.



4.1.3 System Lock

When the system is in login status, left click "Main Menu" ➔ "System Settings" ➔ "General Settings" to enter the interface, set automatic locking function and time (default is 3 minutes) in combo box of the right side . If no operation is done during the time you set, the system will automatically logout. Or you can press " " icon on the remote control to lock the system manually.

4.1.4 Main Menu

After logging in, click "Menu" on the remote control or on the front panel, click menu icon " " or right click "Menu" to enter the main menu as blow. From left to right: data inquiry, backup management, system settings, manual record, manual alarm, disk management, system information, system maintenance and logout shutdown restart.

4.1.5 Status Bar

After starting up, you can see the status bar on the bottom of screen as below:

Icon operation as below:

1) Menu icon: in the login status, click " " to enter the main menu

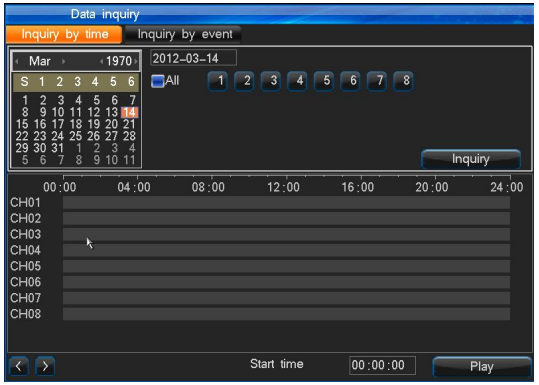
2) System login/lock icon: after starting up, click " " to enter host machine, click " " to lock the machine manually

3) Alarm status icon: click " " to enter "alarm status" to check alarm info or eliminate alarm sound

4) Audio icon: click " " to enable or shutoff audio

5) Display/hide status bar: click "Hide status bar" to hide status bar, when hidden, move mouse to the bottom of screen and "Display status bar" appears. Click to display status bar

4.2 Data Inquiry



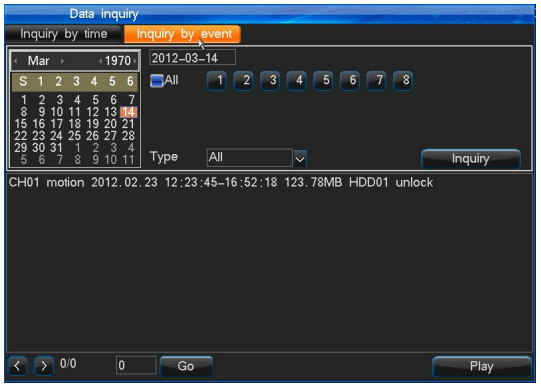
Press "play" button of the remote control, right click to select "data inquiry" or select "record search and playback" from main menu. Click confirm to enter "Data Inquiry" interface as right:

There are 2 ways for the system to inquire the record:

(1) In the "inquiry by time" interface, click exact date in the calendar or input date in the input box then click "inquiry" button to check graphical record info as right:

- Selected inquiry channel is the playback channel.
- Click graphical interface (the position of white vertical line is the start time of record) or input start time of record playback, then click "Play" or double click graphical interface to play the record.
- Green dates in the calendar list stand for the data existence on that day.
- "Green" stands for manual record, "blue" stands for time record. "Yellow" stands for motion record, "red" stands for alarm record.
- In the graphical display, only 8 channels infos are displayed in each page. Click "Page Up", "Page Down" to inquire other channels.

(2) Select "Inquiry by event" in "Data inquiry" interface as right:



- Selected inquiry channel is the playback channel.
- Select record mode in the mode combo box.
- Select record data with remote control cursor and put into "Play" to play the record, or double click with mouse.
- Click "Page Up", "Page Down" to turn the pages.

Playback Interface Functions:

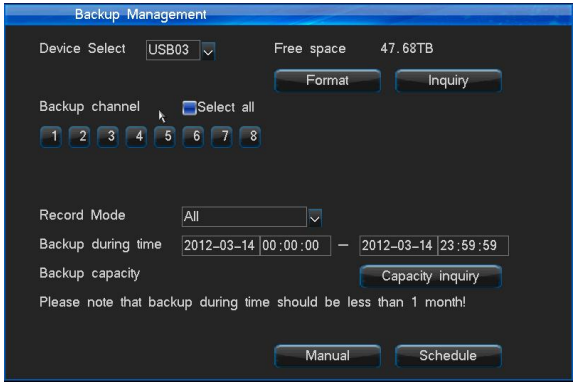
- Playback: Selecting single or multiple channels in inquiry channel corresponds to single or multiple playbacks. Supporting eight pictures full playback function (Right upper corner with red round dot is main channel, double click to switch main/auxiliary channel), it's available to switch by number buttons of remote control when single picture plays back.
- Right click to pop up or hide playback control panel when playing back.
- Supporting mouse operation to partial zoom. Operations in detail: enter playback interface and select partial zoom, left drag in the channel interface and select zoom area then release the mouse to realize the partial zoom; Right click to cancel the zoom area, right click again to exit zoom interface.

4.3 Backup Management

There are 2 ways for the system to backup: (1) Backup to remote PC via network (refer to client instruction)

(2) USB flash disk backup, supporting hot plug, the format of backup disk must be FAT32.

"Main Menu" ➔ "Backup Management" to enter the interface as right:



4.3.1 Manual Backup

1.Backup

Operations in detail as below:

1) Select device, backup channel, record mode and input exact time period.

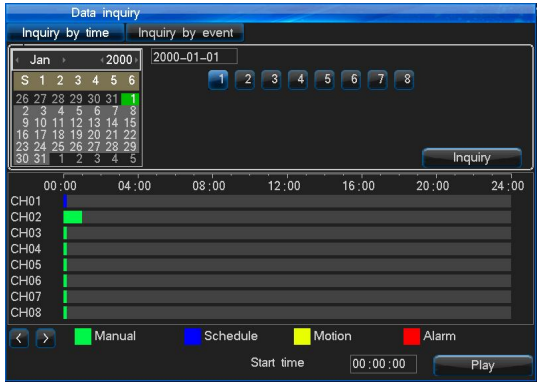
2) Select "Capacity inquiry" to check the capacity of backup data.

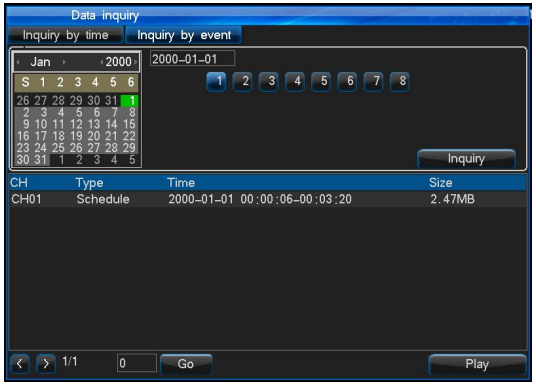
3) Select "Manual" to pop up the confirmation page, confirm it again and the system will execute backup automatically.

4) It's able to backup if there is record. No need to wait.

2.Backup File Playback

1) Please click "Inquiry" in the backup interface to enter the backup file data inquiry interface as below:

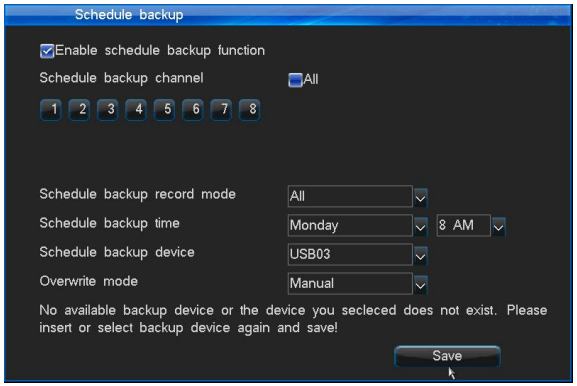




2) Backup file data inquiry also includes inquiry by time and inquiry by event. The operations for backup file inquiry and playback refers to data inquiry method.

Caution: Backup file is only able to play back in single channel, there is no "Inquiry by type" function in backup event inquiry.

Note: Progress bar is not able to be dragged when playing.



4.3.2 Schedule Backup

Click "Schedule" in Backup Management interface to enter schedule backup interface as right:

Settings include: enable schedule backup function, selecting schedule backup channel, record mode, backup time, backup device. When the settings are save, the machine will automatically backup by the moment.

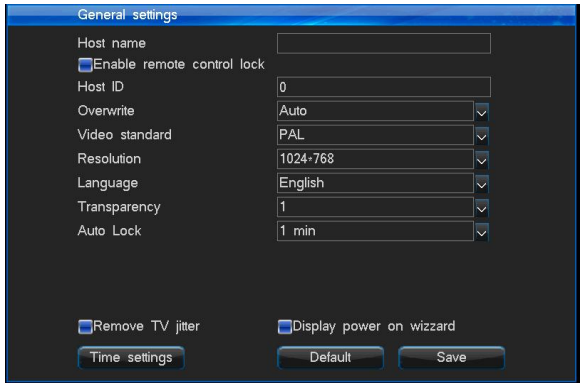
Caution: Backup time is not able to outnumber 1 month. If the time of schedule backup is the same with the time of schedule restart, the latter owns higher priority.

4.4 System Settings

System settings includes following submenus: general settings, output settings, record parameters, schedule record, alarm settings, serial settings, PTZ settings and network settings.

4.4.1 General Settings

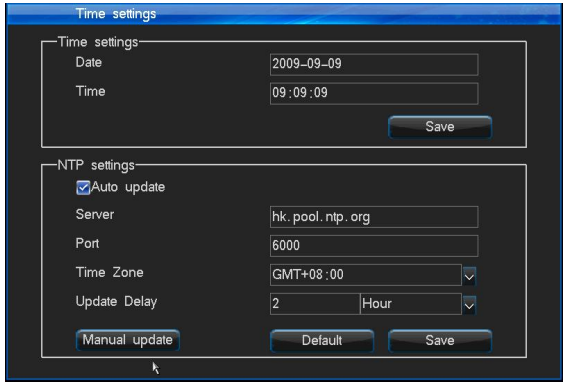
After logging in, select "Main Menu" ➔ "System Settings" ➔ "General Settings" as below:



- Host name: set host name
- Enable remote control lock: select to enable remote control lock function which is able to lock keystroke.
- Host ID: when controlling keyboard and connecting multiple DVRs, host ID is used to identify device, also it's used to lock/unlock remote control.
- Record overwrite type: "Auto" is recommended. After HDD is full, the system will overwrite earliest file. The overwrite is by file, so when the overwrite begins, the HDD capacity will be 0. If you select "Manual"type, the system will prompt whether to overwrite the earliest file and won't record anymore.
- Video Format: PAL/NTSC
- Resolution: supporting 1280*1024，1024*768
- Language Switch: temporarily supporting English only
- Transparency: the transparency of menus overlying real time image. Default is 5, 1 stands for highest transparency.
- Enable Auto Lock: System will get into the locking status after period (1-10min) you set. Default is 3 minutes.
- Remove TV Jitter: Default is enable
- Display Power On Wizard: Save to enter the wizard next time when starting up, the machines will prompt whether to enter the wizard for quick settings.

- Time Settings

After logging in, select "General Settings" ➔ "Time Settings" to enter the interface as below:



This menu is used for editing current system time, which supports double click date to edit, also directly editing. (Note: Please proofread time when initially using; System time is closely related with video record, so editing time for general occasion is not recommended)

- Network Time Checking

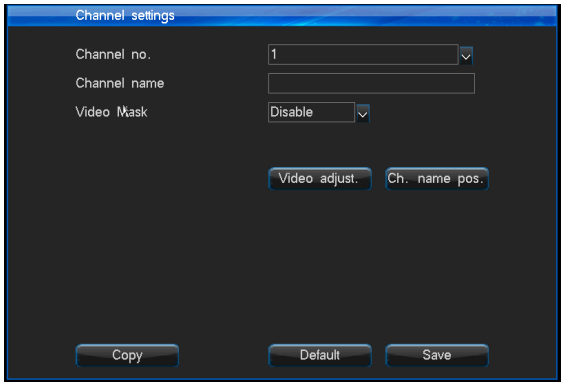
NTP: NTP stands for Network Time Protocol, it gains current time via the connection between network and remote time server and set the time into system time and edit front panel time into this.

In NTP Settings interface, set time server, default is hk.pool.ntp.org, port123, default time zone is GMT+08:00.

1. Time Server: default server is able to proofread time successfully, generally the default doesn't need to change. If the default time is incorrect, you can manually edit time server
2. Port:This SNTP supports TCP protocol only
3. Time Zone: Supporting 26 time zones for setting
4. Update Delay is hour, day, week and the effective range are all (1-60). Select "Auto update" to proofread by update delay, or you can select "Manual update" to update system time immediately
5. DVR needs to access WAN for the reality of NTP

4.4.2 Output Settings

After logging in, Select "Main Menu" ➔ "System Settings" ➔ "Output Settings" to enter the interface as left below:



1 Channel Settings

Select "Output Settings" ➔ "Channel Settings" to enter the interface as right above:

Channel settings mainly edit channel name, video mask, video parameters modifying, video input modifying and channel position settings.

(1) Channel Name

- Maximum 31 characters can be set in each channel's name
- Mouse Modifying: left click to pop up soft keyboard in the input box, use caps buttons to switch numbers, letters, punctuations to input the name
- Remote Control Modifying: continuously click number buttons to switch input (not supporting Chinese input)
- The default name position is on the upper left corner of the channel. Enter channel name modifying interface and left click "ch" to drag and change the position
- The channel name won't be copied when channel copying

(2) Video Mask

In some monitoring places, video mask is needed to shield some private or sensitive areas, such as password keyboard of the bank.

Video Mask Types: Disabled, real time mask, record mask, full mask. Record mask and full mask supports 4 mask areas.

Disabled: Display normally, mask functions disabled.

Full Mask: Mask area is shielded when real time playing, playing back, browsed by IE or Client.

Real time mask：Only the real time pictures are mask.

Record mask：The selected mask area will not be masked in real time images, and will be mask in video playback images, IE browse images and client browse images.

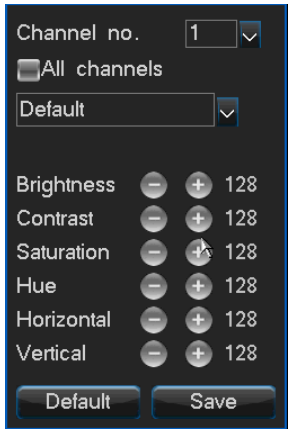
Full mask：The selected mask area will be all masked in real time images, video playback images, IE Browse images and client browse images.

Record mask, full mask setting way as below:

- At the Video Mask drop box, select "record mask" or " full mask", right click the " mask area" to enter the setting page.
- Set by mouse: Left click a pane as the start position of the mask area, then click another pane as the end position, and the area will show.
- Set by remote controller: press direction key to move the cursor, press "OK" to confirm the start position, then move the cursor to select the area you want to mask, press "OK" again to confirm the end position. Press "clear" to cancel the area.
- Back to the channel setting interface, click save to activate the setting.

（3）Video adjustment

- At channel settings interface, user can click video adjustment to enter the video parameter settings, or can press "image" button remote controller or right click mouse to enter "video adjustment" to adjust the video parameters, the interface is as the right figure:
- Default video parameter: brightness (128), contrast(128), saturation(128), hue(128).
- Channel No.: used to switch channels, user can also setup all channels directly.



Adjustment Method:

（1）Select the parameters you want to change, then press “+” “-” button on the remote controller.

（2）Click the left mouse on the “+” “-” to change the value , the “+” “-” on the interface can indicate the increase or decrease of the value.

（3）Video input adjustment

Video input adjustment: adjust black edges on each channel. The input video is normally with black edges, actually DVR reduced black edges by moving the capturing window position to capture more effective information.

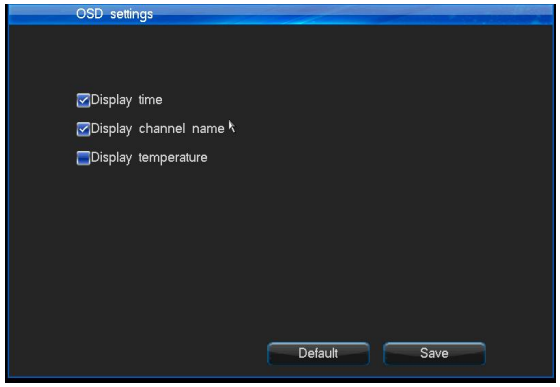
Horizontal offset: set the capturing window potion.

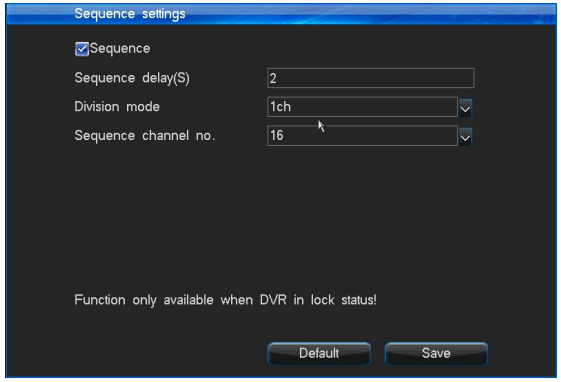
Vertical offset: fixed.

2 OSD settings

At “Output Settings”, chose “OSD Settings” to enter the interface as the left figure below:

This function is mainly used to modify the OSD display settings, including: display time, display channel name and display temperature.





3 Sequence Settings

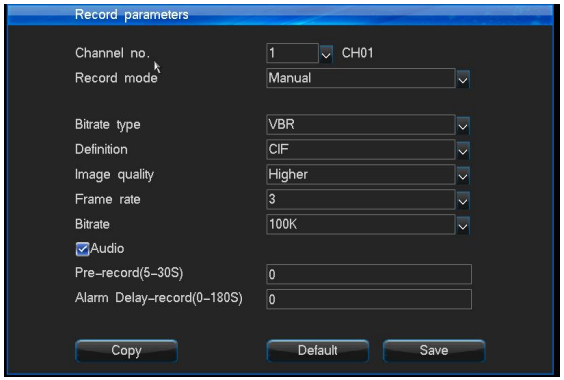
At “Output Settings”, select “Sequence Settings” to enter the interface as the right figure above. This function is used to cruise different channels, user can select sequence channel No., sequence division, sequence interval time.

- Sequence format:1ch, 4ch, 9ch, 16ch divisions.
- Sequence channel number: user can set the sequence channel number, the sequence channel number must be more than the selected division.
- Sequence interval time: range is 3-60s.

Note: The sequence function is only enable in system locking status.

4.4.3 Record Parameters

Before using the record function, it is important to set the record parameters. It is related to video playback and hard disk capacity, etc. After login, select “record setup” ➔ “record parameter”to enter the interface as follows figure:



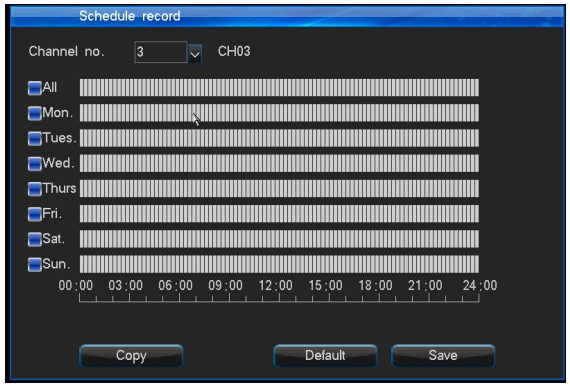
- Channel No.: Customer can select the channel by pressing “+”, “-” on remote controller or by the mouse.
- Record mode: The record parameters will be active in the selected record mode.

- Definition: CIF/D1 adjustable (only for channel 1, other channels are CIF), depends on specific models.
- Encoding stream type: VBR and CBR.

VBR: It means when compress the video signal, system can adjust the compression bite rate dynamically according to the changing of the image source. Thus, when recording, system maximally saves HDD capacity, and for net transmission, the bandwidth is also maximally utilized.

CBR: The compression bit rate keeps constant even when image source changes. The characteristic for CBR is in limited bitrate to have good compression images, as well as easy to estimate the HDD occupation and network bandwidth.

- Video quality: There are 6 levels of video quality (highest, higher, high, middle, low, and lowest).
- Frame rate: PAL, 2-25 frames adjustable; NTSC, 2-30 frames adjustable.
- Encoding stream: When compressing the intense moving image, we should make a upper limit of the compression bit rate, there are (unit: bps):100K,128K,256K,512K,1M, 1.5M, 2M, 3M, 4M(Note: under the CIF maximizing the 1M., the more intense of the movement, the higher bite rate you should set).
- Audio: The on/off switch for audio (Tick off indicates open, otherwise means off).
- Pre-record time: The 4 record modes support Pre-record function, default pre-record time is 10s, range is 5-30s. Due to the variable bit rate, the actual pre-record time may have some difference with what your set.
- Delay record time: The record duration time when the motion/sensor alarm appears, default duration time is 30s, range is 0-180s.



4.4.4 Schedule Record

After log in, select “System Settings” ➔ “Schedule Record” to enter the record setting interface as the right figure:

1、 Channel No.: Select the corresponding channel No..

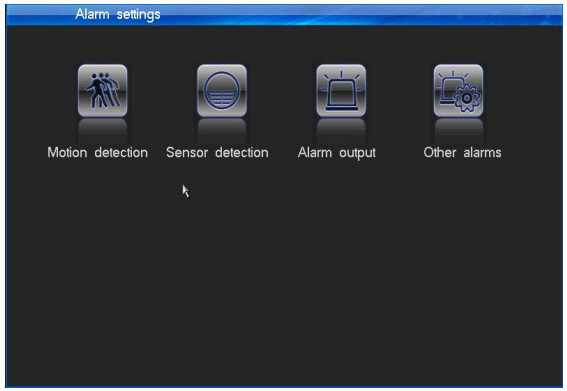
2、 Deployment period：Select the recording date (everyday or someday), and set the record deployment period.

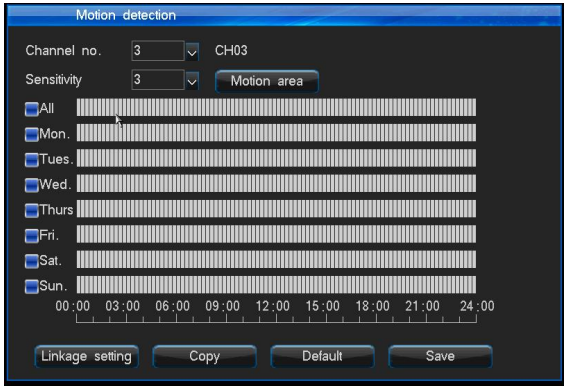
Time period setting method：Set the alarm deployment period, system supports setting multi-periods for everyday as below figure. Time period should be selected in chronological order. Tick off the date and then enable the time period by dragging the left mouse to set the deployment period. (Note: double click left mouse can cancel one selected time period.); in addition, user can also set the time period by remote controller or double click mouse（move the cursor by remote controller to time bar and confirm, or double click the time bar by mouse to enter the time period setting interface）, and can randomly set 6 time period. (Note: all time period default displaying as the multiple of 15).

3、 Click “save” to activate the settings, you can also duplicate the settings to other channels.

4.4.5 Alarm Settings

Alarm Settings is containing submenu: Motion Detection, Sensor Detection, Alarm Output, other alarm, interface is as the left figure below:





1. Motion Detection

After login, click “Alarm Settings” ➔ “Motion Detection”,the interface is as the right figure above:
By analyzing the real-time video, the system could confirm whether the video scene has changed or not. If you need record when the video scene is changed, then you can through “Motion Detection”to perform it, user could set the motion detection time, schedule time, sensitivity, detection area, alarm output channel and whether enable audio alarm.
The specific operation step of motion detection setup is as follows:
【Step 1】After login, through“System Settings” ➔ “Record Parameter” ， to set the corresponding channel pre-record time and alarm delay record time.
【Step 2】Choose the motion record channel.
【Step 3】Define the detecting sensitivity level: at “Motion Detection” menu select “ Sensitivity” setting,
The sensitivity of the motion detection is adjustable and contains 5 levels from 1 (Lowest) to 5 (Highest). When the motion detection of the current channel happens, the system will alarm and record. If the sensitivity is low, such as“1”, when the video scene occurs big changes, the system will motion detection alarm; If the sensitivity is high, such as“5”, when the video scene make little change, the system will motion detection alarm.
【Step 4】Setting detection area: Before you start the motion detect, you should define which areas are detection areas, then when image is changed in these areas, it will detect and make alarm. System default yellow area is detection area.

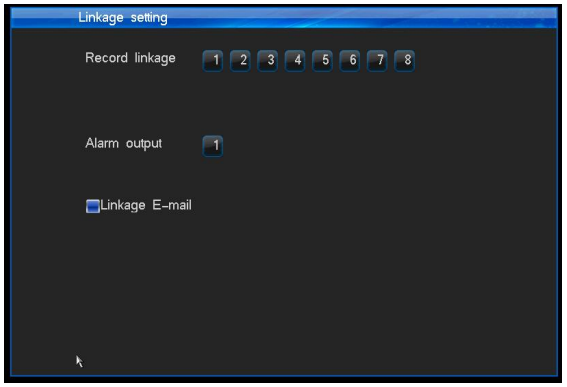
Setting detection area by remote controller. Press direction button, move the cursor to set the start point, then move cursor to the area you want to be the end point. Press the confirm button to select (selection can be made only frame by frame), then press “return” button to the motion detection setting interface and save the setup.

Setting detection area by mouse: Left click a pane as the start position of the detection area, drag the mouse by pressing left button, the area shown is the detection area. Double left click mouse to cancel your choice. Click “return” to return to motion detection interface and save the setup.

【Step 5】Setting deployment period (deployment period specific settings please refer to schedule record deployment period setting).

【Step 6】Linkage Setting: Set the channel linkage record, alarm output, linkage alarm E-mail upload.

- Linkage record：Select the channel no. that expect to motion linkage record.
- Alarm output: Alarm output in blue color indicates that alarm output will be processed when there is alarm occurred; if in grey color, indicates no alarm output when alarm occurred.
- Linkage E-mail：Select“Linkage E-mail”option (by symbol tick“√”) means the alarm relevant information will be sent by email to the specific email box when there is alarm occurred.



2. Sensor Detection

Alarm record settings as follows:

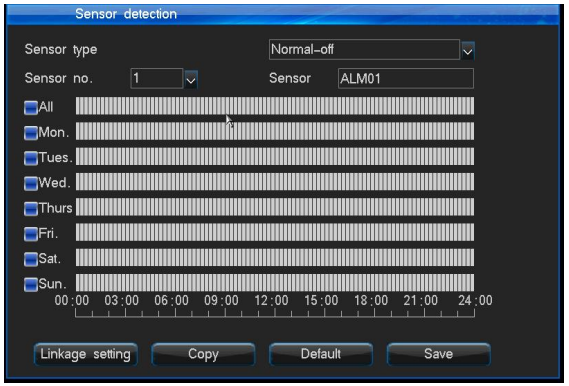
【1】After login, through “System Settings” ➔ “record parameter” to set the corresponding channel pre-record time and alarm delay record time.

【2】Through “Alarm Settings” ➔ “Sensor Detection” to enter the interface as the right figure below.

【3】Choose the sensor type: normal on or off; When normal on, if input terminal is higher than 12V or lower than 0V, the alarm will be triggered; When normal off, it is opposite.

【4】Choose the sensor number.

【5】Set the deployment period (the specific setting please refer to



schedule record deployment time setting).

【6】The linkage setting: Set channel linkage record, alarm output, linkage E-mail alarm upload and set the PTZ preset point.

- Record Linkage：Sensors can record by linkage channel when alarm, suggest each sensor corresponding to the linkage record channels which is convenient to inquire the record data by channels. Channel buttons in blue color indicates linkage record; if in grey color, indicates no linkage record.
- Alarm output: Alarm output in blue color indicates that alarm output will be processed when there is alarm occurred; if in grey color, indicates no alarm output when alarm occurred.
- Linkage E-mail：Select “Linkage E-mail” option (by symbol tick“√”） means the alarm relevant information will be sent by email to the specific email box when there is alarm occurred.
- The system supports alarm Dome camera pre-set point function (only if the Dome camera supports pre-set call function), the setting is as below:

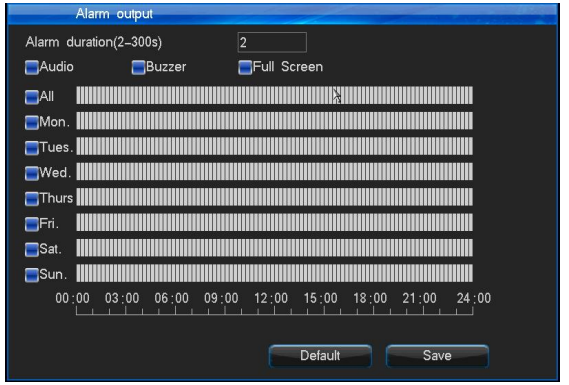
1、Click “PTZ preset point” and confirm to enter the alarm Dome Camera preset point interface, enable the “PTZ preset point effective” and set the preset point. (Note: the range of the PTZ preset is 1-255,255 means close). After finishing this operation, return to the sensor detection interface and “save” to activate the setting.

2、In “COM Setup” interface you can set COM type, COM device, baudrate.

3、In the PTZ setup interface you can set the protocol, address code.

4、Switch to the channel which you want to set preset points, press the“PTZ” button on remote controller to enter the PTZ control mode, then press “PRESET”, input the preset number mentioned in step 1,or you can right click the mouse to enter the PTZ status, select “PTZ”, then you can see the interface, input the preset number mentioned in step 1 to the box, click “preset” to save setting. Right click the mouse again to quit.

3. Alarm Output

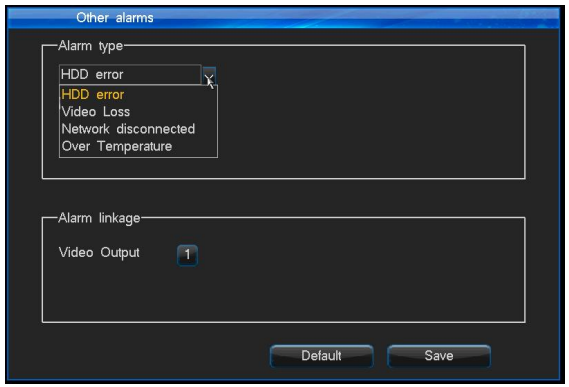


After login, through "Alarm Settings" ➔ "Alarm Output" continuous operations to enter Alarm Output interface.The interface is as the right figure above:

The Alarm Output interface contains below selections: Alarm Output time, Audio, Buzzer, Full Screen, Alarm Output Deployment time.

- Alarm output time: inspection (2~300s), the system default is 30s.
- Audio： when the alarm is triggered, the alarm sound will output to the audio output.
- Buzzer： when the alarm is triggered, the system will start buzzing.
- Full Screen: when the system is in multi-picture and the alarm is triggered, the alarm channel will auto full-screen.
- Alarm deployment time: the system default alarm output schedule time is 00:00-23:59 of every day. (Specific settings please refer to schedule record deployment time settings)

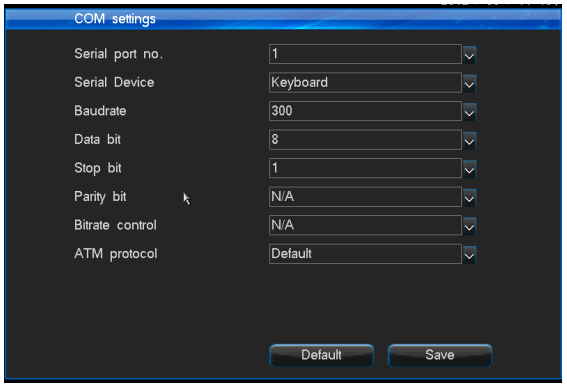
4. Other Alarms



After log in, through "Alarm Settings" ➔ "Other Alarms" to enter the setting interface as the right figure below:

- Alarm Type：HDD Error, Video Lost, Network disconnect, Over temperature，and HDD Error, Video Lost, Over Temperature alarm function default as enable, Network disconnect alarm function default as unable.
- Alarm Linkage：alarm output button in blue color indicates that there will be alarm output when alarm occur; if in gray color indicates no alarm output when alarm occur; Video Lost support Email Linkage upload function.

4.4.6 COM Settings



After login, click “System Settings” ➔ “COM Settings” to enter the interface is as the right figure:

You can do the operation of connecting other serial device to DVR in this interface. DVR provide two pairs of serial connection terminal: RS485 and RX. The two serial ports both are full duplex terminal which have receive and transmit function. DVR can be connected to PTZ, serial keyboard and other serial devices at the same time.

RS485 parameter：including COM no., COM device, Baud rate, Data bit, Stop bit, Parity bit, etc.

These parameters are used for defining the COM type, there are 3 types to choose: PTZ, serial keyboard, transparency channel.

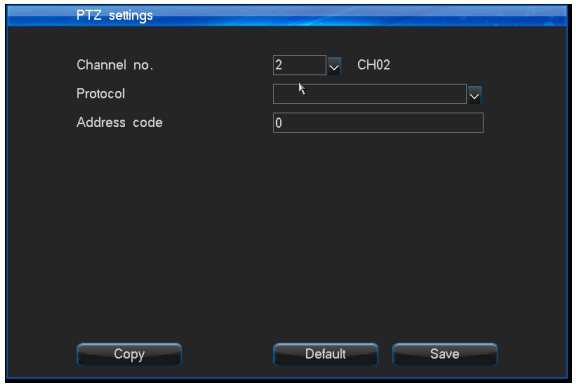
- Baud rate: Set the baud rate of the communication between COM and its outer devices. Such as PTZ ,keyboard's baud rate must be identical with DVR system's baud rate.
- Data bit, stop bit, check bit: Set the data bit, stop bit and check bit according to the PTZ protocol code. Commonly, the PTZ protocol’s default date bit is 8, check bit is none, stop bit is 1.
- Keyboard address: Set in “General Setting” ➔ “HOST ID”; When one keyboard connect with several DVRs in the parallel way, the keyboard is used to control and differentiate different DVR’s identify code.

4.4.7 PTZ Settings

After log in, through “Main Menu” ➔ “System Settings” ➔ “PTZ settings” to enter the setting interface as below figure:

The procedure of PTZ setting:

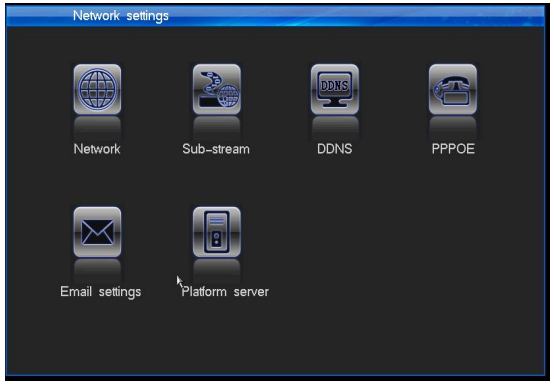
- Set COM type, COM device and baud rate in the “COM Settings” interface.

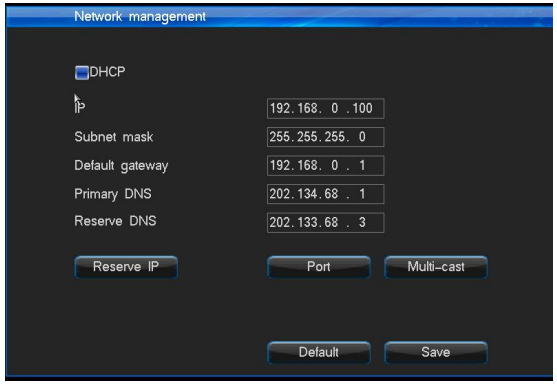


- Enter the “PTZ Settings” interface to set protocol and address code (The default PTZ address code is coincide with every channel, for instance, the first channel’s PTZ address code is 1. Note: PTZ protocol, baud rate, address code must coincide with the PTZ camera itself.)
- Switch the channel to single picture display status, press the “PTZ” key on the remote controller to get in the PTZ control mode, then you can use the remote controller to control the PTZ, press “PTZ” again you can quit the PTZ control mode; You can also push the “PLAY/PTZ” button on the front panel for about 3s or right click the mouse to enter the PTZ control interface (Note: you can move the PTZ control interface by double click mouse).
- Setting and calling preset point by the remote controller: Enter the PTZ control interface, press the direction button make the PTZ turn the direction which you want to set as preset point, press “*preset” button on remote controller and input the No. of the preset point in the box(such as 001),then turn the PTZ to another direction, if you press the “#call” button and input the No. (1) which you preset to the box, the PTZ will turn to the 001 preset point automatically.
- Setting and calling preset point by mouse: Enter the PTZ control interface, double left click mouse at the preset input box to enable the software-keyboard and input the preset No.(such as 1). Right click mouse to quit software keyboard, then click “preset” to activate the setup. Then turn the PTZ to another direction, if you click the “call” and input the No.(1) which you preset to the box, the PTZ will turn to the 1 preset point automatically. Right click mouse to quit the PTZ interface.
- Multi-preset position sequence: Enter the PTZ control interface, left click “Sequence Settings” to set the related parameters of multi-preset point sequence. (Note: Only enable when system log off)
  - （1） Sequence interval time: 0-99s.
  - （2） Preset No.: each channel can max set 16 preset position.
  - （3） Range of preset No.:001-255,255 means closed.

4.4.8 Network Settings

After login, user can through “Main menu” ➔ “System Settings” ➔ “Network Settings” to enter the network setup interface as the left figure below:





1. Network Managements

Through “Network Settings” ➔ “Network” to enter the “Network Management” interface as the right figure above:

- Auto acquire IP address: If the server in the LAN where the DVR is placed has the DHCP service and you have selected the “DHCP” option, DVR will obtain a dynamic IP address from the server and displayed within the IP address column.
- Disable DHCP: If there is no DHCP service in the LAN, you can choose this option to designate the static IP address.

When there is no auto designate IP address service in LAN, the system can edit the IP which is to designate a static IP address for the system itself.

IP settings: This IP must be unique. It can’t conflict with the IP of other servers or working stations in the same LAN. Default: 192.168.0.6.

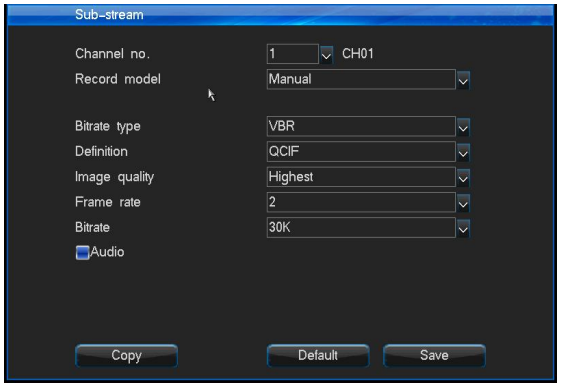
Subnet mask code: Used to differentiate subnet.

Gateway address: Used to realize communication between different networks, it needs to set up gateway address.
DNS server: Input the DNS address acquired by PPPOE (Note: Please ensure the DNS address is correct, otherwise the DDNS will not work).

- Reserve IP：Set the corresponding IP address, Subnet mask, Gateway address, DNS server. Note: The reserve IP is effective when the DHCP gain IP address is invalid.
- Port: Command port, HTTP port, Upgrade port.
  Command port: The port for data transmitting with client, default set is 8101, port range 8000-9000.
  HTTP port: IE browse port, default set is 81. Port can be changed. You have to restart the system to effect the changes. After you change the HTTP port, you should type http://IP:port for IE browse.
- Enable multi-cast: This function only affects UDP stream.
  Multiple IP address: Multiple IP address set range is from 224.0.0.0 to 239.255.255.255;The system default is 239.0.0.1.
  Multiple port: The default port is start with 8000. Note: If there are 2 DVRs or above in one section of the net, please ensure that the multiple port is unique, or you cannot open the multiple video.

2. Network Sub-stream

After log in, through “Network settings” ➔ “Sub-stream” to enter the setting interface as the right figure:



- Channel No.: Customer can select the channel by pressing “+”, “-” on remote controller or by the mouse.
- Record mode: The record parameters will be active in the selected record mode and use the corresponding record parameters.

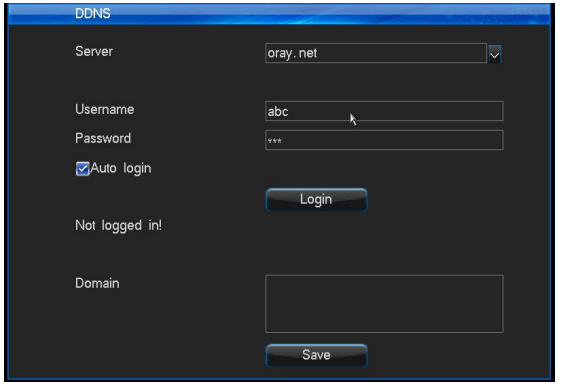
Encoding stream type: VBR and CBR.
VBR: It means when compress the video signal, system can adjust the compression bite rate dynamically according to the changing of the image

source. Thus, when recording, system maximally saves HDD capacity, and for net transmission, the bandwidth is also maximally utilized.

CBR: The compression bit rate keeps constant even when image source changes. The characteristic for CBR is in limited bit rate to have good compression images, as well as easy to estimate the HDD occupation and network bandwidth.

- Definition: CIF/QCIF switchable.
- Image quality: There are 6 levels of video quality (highest, higher, high, middle, low, lowest).
- Frame rate：PAL，2-25 frame adjustable；NTSC，2-30 frame adjustable.
- Encoding stream: When compressing the intense moving image, we should make an upper limit of the compression bit rate, there are (unit: bps): 30K,45K,60K,75K,90K,100K, 128K, 256K, 512K, 768K.
- Audio: The on/off switch for audio (Tick off indicates open, otherwise means off).

3. DDNS



Due to the IP address is dynamic assigned every time the machine restarts, so when the machine is connected to WAN via PPPOE way, you can use the DDNS in network setting and via domain name to visit the machine. Our DVR system support DDNS function. You can analyze the WAN IP which is directly dial form the ADSL, and also the router mapping WAN IP address. This function supports the domain name which is registered from www.oray.cn, www.dyndns.com. You can choose one of them according to the need.

- Oray domain name：Register on www.oray.cn and fill the correct information to apply the Oray domain name, user can visit the machine by the applied domain name.

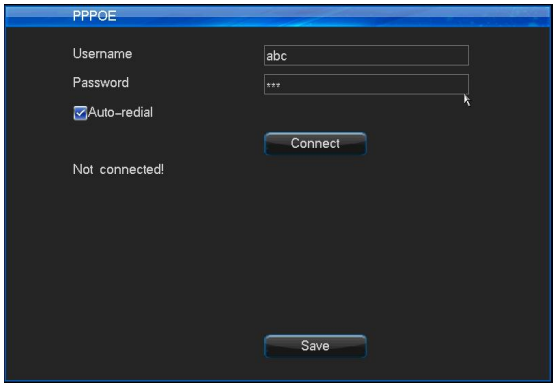
  Parameters required to set：User input the user name, password that registered on Oray website, save and log in, then can

get the domain name.

- Dyndns domain name: Register on dyndns website and fill the correct information to apply the dyndns domain name, user can visit the machine by the applied domain name.
  Parameters required to set: User input the user name, password, domain name that registered on dyndns website, save and log in, then can get the domain name.

4. PPPOE

Select “Network Settings” and click “PPPOE” to enter the interface is as follows:



PPPOE is one of the mode to connect to the WAN: Connect to the WAN by system via dialing the ADSL directly.

- Username: ADSL account user name.
- Password: ADSL account password.
- Auto Connect: If you select this option, system will automatically connect the WAN after disconnection.
- Connect: After you input the correct ADSL account and password, focus the cursor on the icon and press “Connect” to connect WAN.
- Save：If you select this option, system will automatically save the ADSL password, so you don't need to input them again when reconnect to the WAN.
- It shows the network information of the public network (such as IP, Subnet address) after the connection succeeds. Press “save” button, it will save the options include auto re-dial and save password. Note: You must connect the net manually after first set the “auto re-dial”.

5. Email Settings

After login the “Network settings” interface, click “email setup” to enter the interface, the main function that support alarm email upload is: Motion Detection, Sensor Detection, Video Lost, the interface is as as below figure:
Email upload specific operations:

（1） Firstly enable the email upload for the alarm that will upload email alert (select the linkage email in the setting menu interface of every email upload), it means email will be sent to inform the user while alarm occur.

（2） Set the SMTP server, default is smtp.126.com.

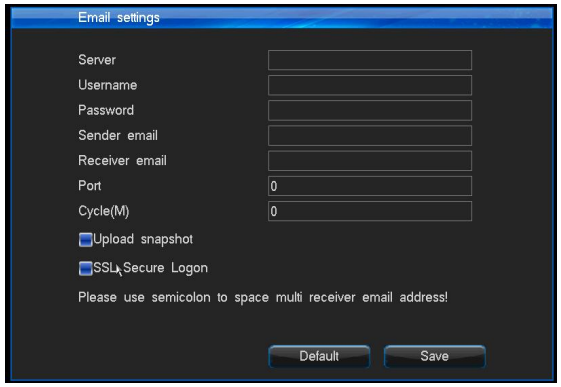
（3） Input the username and password of the mail account.

（4） Input the mail address which applied from SMTP server in the “sender email”.

（5） Input the receiver mail box which can be multiple and separated by “;”, the maximum length of the letter you input is 256 bit.

（6） Default port is 25, normally do not need to change.

（7） Set the e-mail upload interval t time, that is the time interval for upload alarm information to the target email, no matter how many times alarm triggered, it just upload once during every interval time, and also can be uploaded a snapshot which is .jpg in default.



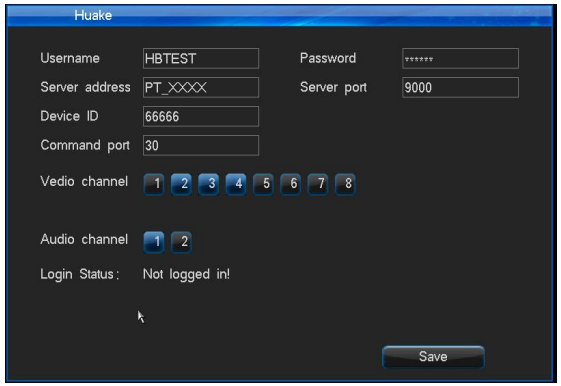
（8） Select to upload snapshot images, the images is captured once there is alarm and sent to the Receiver email.
(Note: Video lost alarm won’t upload the snapshot images.)

（9） After saved the set ting, the receiver mailbox will get the alarm information mail when alarm is triggered.

（10） Gmail、 163、 yahoo email，port No. is: 465, and Hotmail port No. is:25；need to enable“SSL safe log in” .

6. Platform Server

Host system default the platform server as Huake platform. Enter "Network Setting" interface, click "Platform server" to the setting page, click "Huake" and press "Loading…" to enter the interface as below figure:



Below is how to use the Huake mobile platform (Take NOKIA5800xm Symbian system for example):

a、 Set the command port in the DVR Huake platform interface. Command port can be a random value，but cannot have same port value in the same DVR，otherwise there will be port conflict). Only set the "command port" at this step, save and quit after finished.

b、 Mobile phone settings：Install the corresponding client in mobile phone, and then log in, the interface is as shown in figure 1. Fill the IP address, command port, user name, password and byname (default as dvr, normally no need to change)，all the value must be accordance with the DVR side, and then click "Options", choose "Play" to enter "Select to connect" interface as shown in below figure 2. Now select the correcting point you want and confirm to connect to Internet and automatically connect to DVR. After connected successfully, it will display the channel 1 image, shown as below figure 3.

You can process the DVR monitor and corresponding operations. If connection failed, below interface shown as figure4 will be displayed.

Fig1

Fig2

Fig3

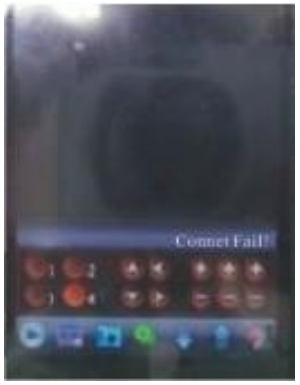


Fig4

Notes:

1、Ensure to fill the correct value in the mobile client.

2、The port value at the mobile client side must be accordance with the command port at the Huake platform of the host DVR.

3、Make sure the DVR and mobile phone can all connect to Internet.

4、When install, make sure to choose the correct software for the corresponding mobile phone operation systems.

5、When use mobile phone real time monitor, the Bitrate usually should be less than 100kb/s, frame rate should be less than 12 so that the user can view the images fluently in awful net speed status.

Note：The command port of Android or Iphone mobile client is corresponding to the host "Network management" command port, which is: 8000-9000; the mobile client installation and mobile remote monitor operations please refer to the mobile client manual.

4.5 Manual Record

- After login to the main menu, left click the "Manual Record" pop-up the interface as the right figure:
- The turn on channels are in blue color, when turn off it is in gray color.
- Once the manual recording is started, it will not stop recording until manual closing. If the power is off abnormally, the recording will continue after the power is on.

There are two ways to start manual record:

【1】Use remote controller "Record"button to quickly enter the setting interface, then confirm or select by mouse and confirm.

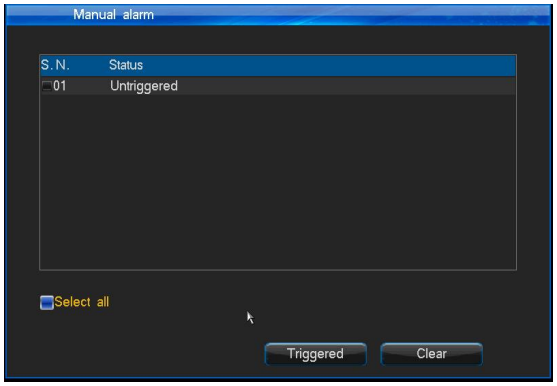
【2】After log in to the main menu interface, select the manual record for settings.

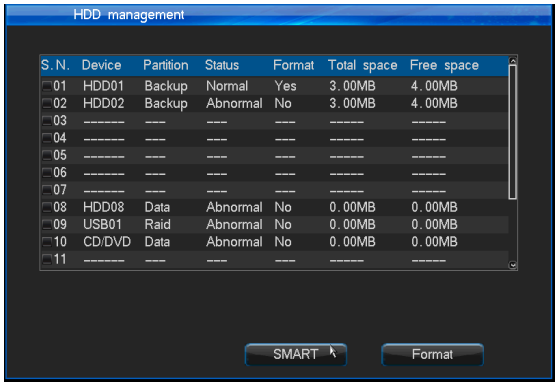
4.6 Manual Alarm

After log in, through "Main Menu" ➔ " Manual Alarm" to the interface as the left figure below:

This function is mainly used to manually trigger the alarm to inform related person when there occurs some kind of abnormal emergency event. Operation method:

Click to choose the corresponding alarm serial number under "S/N", or click "select all" ➔ "Triggering" and the host start alarming until the "Clear" button is selected.




HDD management
S.N. Device Partition Status Format Total space Free space
01 HDD01 Backup Normal Yes 3.00MB 4.00MB
02 HDD02 Backup Abnormal No 3.00MB 4.00MB
08 HDD08 Data Abnormal No 0.00MB 0.00MB
09 USB01 Raid Abnormal No 0.00MB 0.00MB
10 CD/DVD Data Abnormal No 0.00MB 0.00MB
SMART
Format

4.7 HDD Management

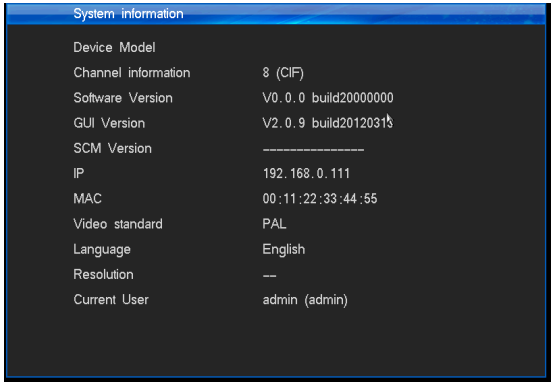
After login, enter the interface through “Main Menu” ➔ “HDD Management”, the interface is as the right figure above:
The 1st line displays the connective HDD NO.. The 2nd line displays the HDD status. The 3rd, 4th and 5th lines display the HDD capacity, free space and partition type information. Choose “SMART” and confirm to enter the smart checking the disk information; mainly check the disk health status and relevant information.
Disk format: System supports only FAT32 format, the capacity of the HDD is above 32G.System supports only one partition for backup.
Format: Select the HDD NO., then press the “format” icon to pop-up the “Are you sure to format ?” dialogue box, after press “Sure”, the system will prompt “It’s formatting...”.

4.8 Information Inquiry

Through “Main Menu” ➔ “Information Inquiry” to check the software version information, log information inquiry, etc, the submenu including: System Information, Record Status, Alarm Status, Online Status, Log Inquiry.

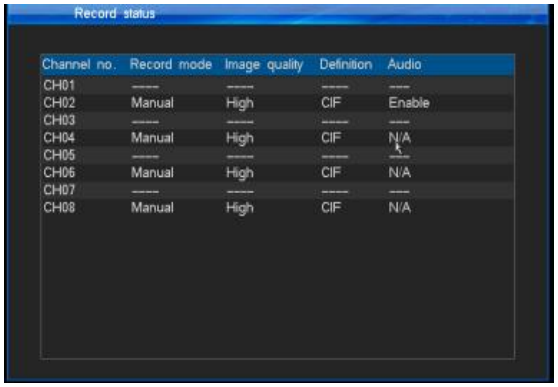
4.8.1 System Information

It displays software version, IP address etc. The interface is as figure below:



4.8.2 Record Status

The interface is as the left figure below: Quick inquire the current system record status. It shows the record status of each channel’s current record type, record quality, definition and the audio record status(on or off), f in the recording status, the“Type” bar would show the type of current record(manual, timer, motion, alarm), record quality shows the current image quality, audio shows the current recording is with audio or not.


Record status
Channel no. Record mode Image quality Definition Audio
CH01 ---- ---- ---- ---
CH02 Manual High CIF Enable
CH03 ---- ---- ---- ---
CH04 Manual High CIF N/A
CH05 ---- ---- ---- ---
CH06 Manual High CIF N/A
CH07 ---- ---- ---- ---
CH08 Manual High CIF N/A

4.8.3 Alarm Status

The interface is as the right figure above:
It shows the alarm type of each channel: Sensor alarm (Red color), motion alarm (Yellow color) and video lost alarm (Blue color). You can clear the alarm through the “CLEAR” button on the remote controller or on the front panel. You can also click by mouse the alarm status indicating light on the status bar to enter alarm status interface, select the“alarm clear” and confirm.

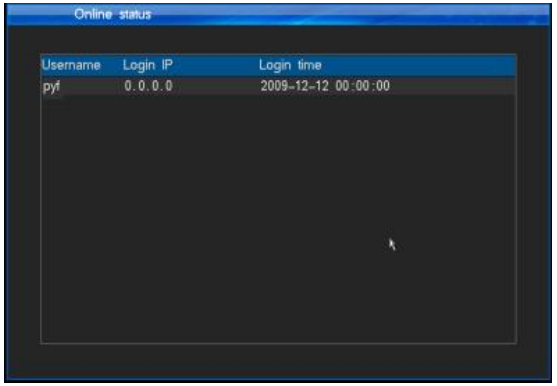
4.8.4 Online Status

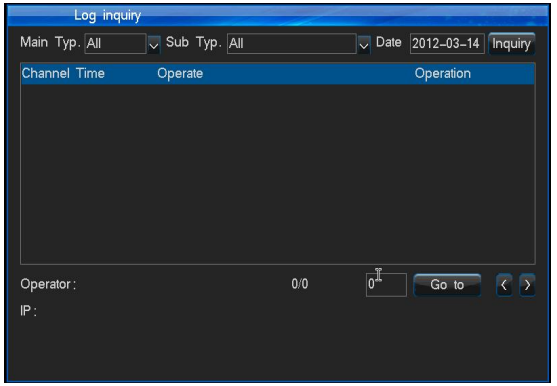
It displays the information of outer PC which connected to DVR. Such as: IP address, login/off time. The interface is as the left figure below:

4.8.5 Log Inquiry

The interface is as the right figure below:

- At the bottom of log information interface will display page No., user can click page up/down to check (The number of the log item is no limited). The log file can't be recognized on PC, the log information of host side can search and show through client software. Click page up/down key for category search in different pages.
- Contents of the logbook: system start-up/shutdown and change version log, alarm log, PTZ control log, user login /log off, changing system parameters, recording playback log, backup log, format HDD log , user login client log ,etc.



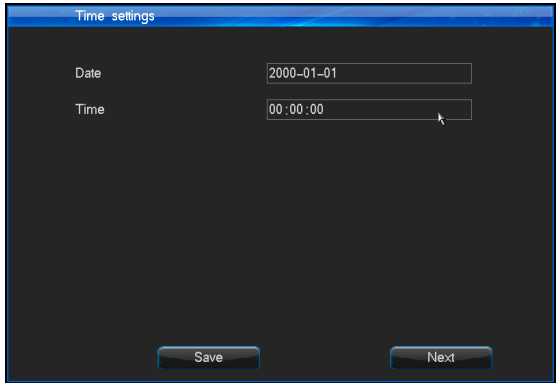


4.9 System Maintenance

Through "Main Menu"➔ "System Maintenance" to go to Time Setting, Equipment Management, etc, submenu including: Time Setting, User Management, Factory Setting, Upgrade Management, Schedule Restart.

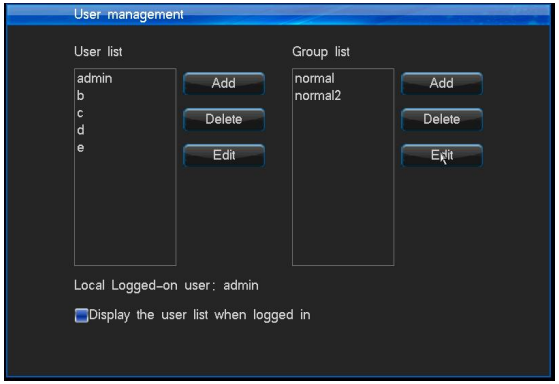
4.9.1 Quick Settings

The interface is as below figure，firstly enter the time settings interface, continuously click by mouse the “Next” button for fast moving to “Time Setting”, “Network Setting”, “Hard disk Management”, “Record Parameter”, “Manual Record” ,etc, settings.
Note: after finishing the parameter setting, click “Save” to save successfully all the settings.



4.9.2 User Management

When the DVR leaves the factory, there is just one user named “admin”, the default password is 888888, please use this password when firstly login the DVR. User “admin” has the most powerful right of all the users, and can create15 users at most, all the rights of the 15 users are distributed by“admin”. In order to protect the DVR’s security, the administrator should modify the password on the “User management” interface.

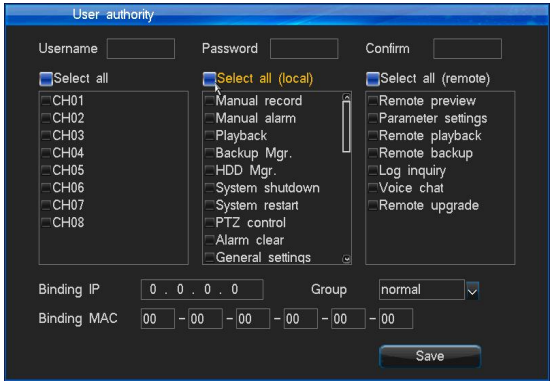


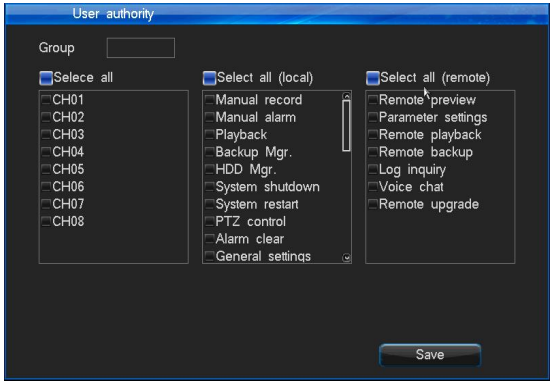
1、User Management

- Add/delete user: Focus the cursor on the “add” icon and click to add new user, move the cursor to select the user in the user list, then focus the cursor on the “delete” icon and click to delete the user.
- Modify password: Using the direction key of the remote controller to move the cursor to the user list, press“OK”, then you can get in the interface nor double click the mouse to get in.
- Support local and remote rights setting.
- Display the user list when login: When login the DVR, use the “+”, “-” on the remote controller or click the wheel of the mouse to select the user; If not select “Display the user list when login”, you must input the username when login.

2、User Group

Support user group function: each user can just take part in one group, the admin user can distribute rights to users in this group. The interface is as follows right figure:

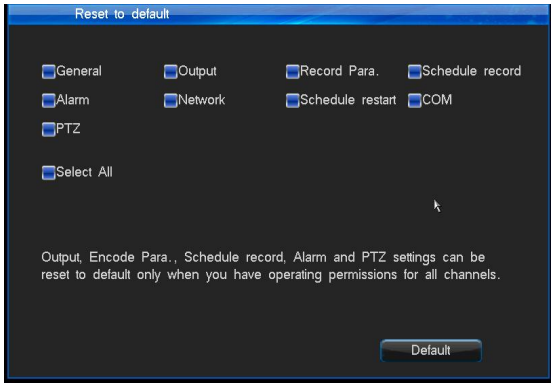




4.9.3 Reset to default

The way to restore to default setting: After login, through "System Maintenance" ➔ "Reset to default" continuous operations to enter the interface as follows:

Note: Network IP and port, System time, user account and hard disk management won't be affected; Output settings, Encode parameter, Schedule record, Alarm settings, PTZ settings, Network settings can be restore default when you have all channels operation limits of authority.



System default setting status as follows:

General settings：Transparency（5）;Record overwrite mode （Auto）;Enable auto lock (open), wait for lock time 3mins;Remote controller lock（close）;

Host ID（1）;display start up guide（Open）.

Output：Video area mask（Disable）;Channel name position;

Display time（open）;Display channel name（open）;Display temperature（open）;Channel sequence（close）.
Record Para：Record Mode（all）;Bit rate type（VBR）;Bit rate（CIF/768K（or 512K），D1/2M）;
Image quality（high）;Video frame rate（25）;Audio（open）;Pre-record（10s）;Record duration（30s）.
Schedule record：schedule record（close）.
Alarm：Motion detection（close）;Alarm record（close）;Sensor type（normal on）;Alarm output channel（1）;
Alarm pre-set points（close）;E-mail Linkage（close）.
Network：Auto reconnect（close）;Auto login（close）;Network bit rate（512K）;Network image qualit（high）;
Network audio（open）.
Schedule restart：schedule restart（close）.
COM：COM device（PTZ）;baud rate（9600）;Data bit（8）;Parity bit（none）;Stop bit（1）.
PTZ：PTZ protocol（Unknown）;Address code（accordance with channel no.）.

4.9.4 Upgrade Management

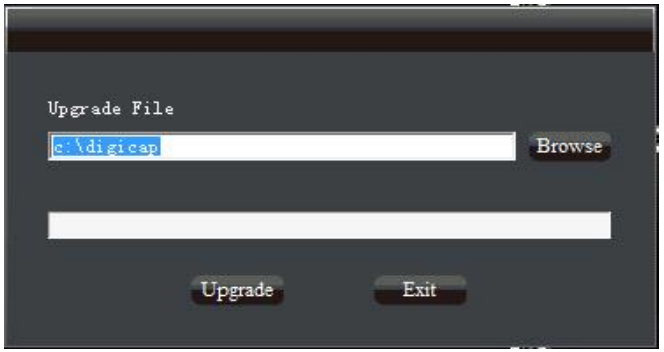
There are 3 ways for software upgrade: 1.Client software upgrade; 2.USB device upgrade; 3. Support ftp upgrade.
Please read the statement carefully before upgrade.

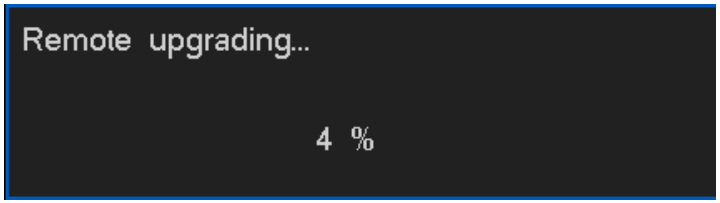
1. Client Software Upgrade

- Please double check the version of the upgrade software, so you can restore to the former version when your upgrade is failed. If your system are running well or just don't need the new function, we recommend you keep the default version. Please backup the important record files before upgrade.

- Do ensure supplying the power and the stability of network when upgrading. Network outages and interrupted power supply will cause upgrading failure. On a PC client remote upgrade download files completed, the host-side did not appear "the update was successful, which is resuming the equipment, please be later...",in six minutes, you can shut down and then reboot, then check whether the host computer update was successful.
- Please double check the version of the upgrade software, including machine model and boot interface, and make sure whether it corresponds to your system. If you have any doubts, don't upgrade, or in case you fail to upgrade the firmware, you can neither redo the system upgrade nor restart the machine (These upgrade failure machine must send back to the factory).
- After upgrade, for the new features, please refer to the user manual of the new version. You can get the new version from our website or the suppliers.
- Don't modify the software (including the name of the firmware), otherwise, we will take no responsibility and will not provide free update.
- Make sure the client installation procedure is the same as the system.
  The procedure is as follows:

1. Connect the Net DVR to PC by coherent network cable or LAN (pay attention to IP conflict).
2. Before upgrading, please confirm the IP address of host computer, then enter client end.
3. After login and choose "system" -> "Remote update".
4. Choose "Browse", choose the file to be updated, and refer to the following figure (left figure).
5. The following figure is displayed on DVR (right figure).





6. Waits for 3 seconds, the DVR will display "Transmitting data finished. Updating software ...". It probably takes 2-3 minutes to update the software.
7. When a window that contains the information of upgrading successfully pops up, it means that the update finished. Then, the machine will automatically restart.
8. After the system restart, the admin password is the former version's.

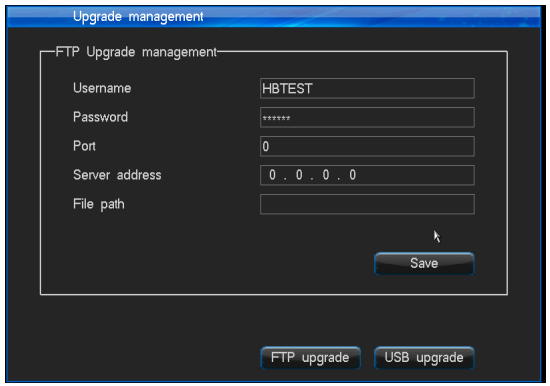
2. USB Upgrade

Operation steps:

1. Copy the upgrade.bin to the U disk.
2. Insert the USB flash to the USB port on the back panel. After the USB device recognized, click "System Maintenance" ➔ "Upgrade Management" to enter the upgrade interface, click "USB upgrade" and confirm the hints to start upgrade.
3. The host says "The system is updating...".
4. When the upgrade have been finished, the host will pops out " Local upgrade successfully" to indicate the upgrade is successful, confirm restart and the host will restart automatically.
5. After the system restart, the admin password is the former version's.

3. ftp Upgrade

Double click the FTP server software in PC, set according to the guide. Set up user name, password, appointed root list (the disk that place the upgrade files), limits of setting (download limits must be set).



1. Automatically enter server after configuration completed, then set the server IP, Port in server configuration.
2. Enable FTP service.
3. Upgrade and manage the DVR configuring information in ftp, the interface is as the right figure:

   User name=Step 1, set up user name.

   Password=the user password that set up in Step 1.

   Port= the server port set in Step 2.

   Server Address=the server IP that set in Step 2.

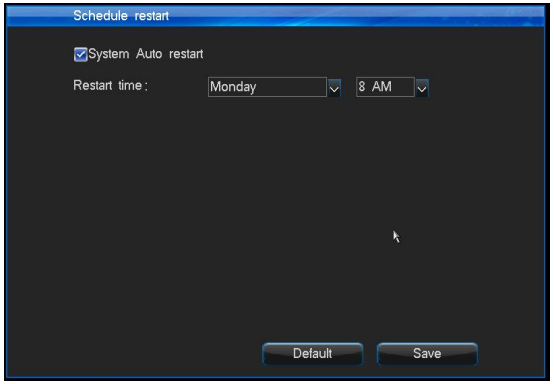
   File route=location that place the upgrade file. If firstly assign the d disk as root directory, and set up 70XX file in this disk and place the upgrade.bin upgrade file inside, then the file route =/70XX/upgrade.bin.

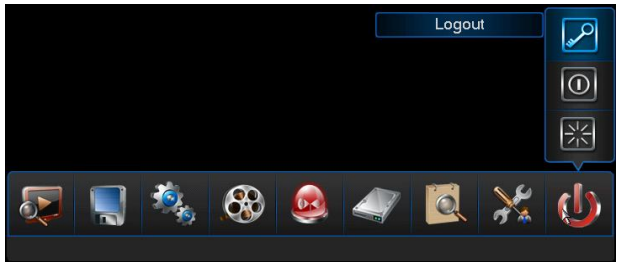
   Finally save, click ftp upgrade and confirm, the host will automatically upgrade.

4.9.5 Schedule Restart

Click to select “Main Menu” ➔ “System Maintenance” ➔ “Schedule Restart” to enter the schedule restart interface as the left figure below:

Enable the system automatically restart function, after setting the restart time and save, the machine will pop-up“schedule restart time, whether to restart right now?”; choose “Yes” and confirm, the machine will automatically restart; choose “No” to cancel restart. If no selection, the system will automatically restart after 20s.





4.10 Shutdown, Logout and Restart

Through “Main Menu” ➔ “Shutdown” to log out the user, shutdown, restart and such relevant operations, the interface is as the right figure above:

- Logout：Click to choose the “Shutdown” ➔ “Logout”, and then the machine will be automatically locked.
- Shutdown：Click to choose “Shut down” ➔ “Turn off”, or right click menu and choose “Shut down”, hints “whether shutdown DVR” will pop-up, the host will be shutdown after confirm (Here need to push the on/off switch on front panel if to restart the machine)
- Restart: Choose “Shut down” ➔ “Restart”, and then after confirm the hints “whether to restart DVR”, the host will automatically.

4.11 Password Reset

When you forget the system password or the admin's password, the factory's default setting can be retrieved by the following operation.

The operations are as follows:

1. Shut off the machine and cut off the power supply.
2. Unload the cover screw, and remove the case lid from the machine.
3. Find J1, it's on top right of the SCM which is beset on the back of the front panel.
4. Jump the thread piece to put the legs 1, 2(next to the resistance R13) of J1 to the status of short circuit.(the thread piece is put on the legs 2, 3 when leave factory).
5. Connect the power supply, and start the machine. You can hear buzzer sounds, and it indicates that the passwords have been set to the default value at the moment.
6. Shut off the machine again, and cut off the machine power supply.
7. Pull out the jumping thread piece to enable the leg1, 2 in open circuit status, and then park the legs 2, 3 by the jumping thread piece to enable them in short circuit status.
8. Seal the machine with cover and the operations are completed.

4.12 Power Resume

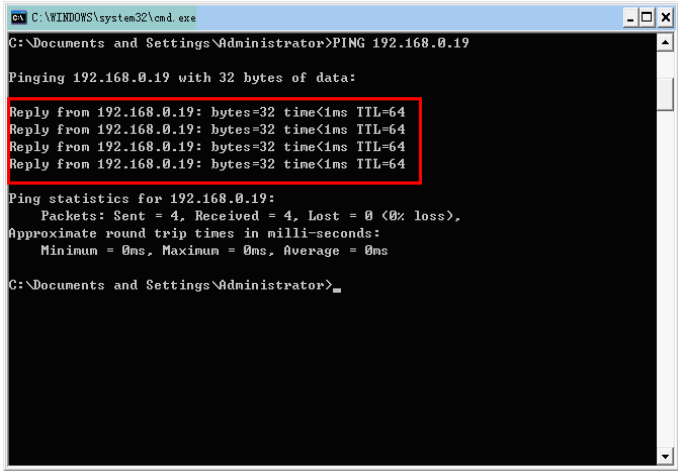
If the power is shut down unexpectedly when the system is in standby or working status, system could start automatically restart and resume to the original status after power back. The advantage of this function assures the system maintain the continuity condition for outage.

Appendix 1 IE Browse Operation Instructions

Notice: Please set firewall rank for low or medium.
Software such as net assistant software, etc. should be blocked or unloaded, otherwise the software may not run properly.
Please guarantee to install DirectX9.0 of Microsoft and confirm the Internet Explorer edition is 6.0 version or above.

1.LAN Configuration for IE Browse

1.“Ping”the host IP first to confirm if the DVR is connected.
2. Type the host IP into windows IE and connect to the DVR. Input user name and password to log in. If the log in is succeeded, the following interface will pop out.


C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Administrator>PING 192.168.0.19
Pinging 192.168.0.19 with 32 bytes of data:
Reply from 192.168.0.19: bytes=32 time<1ms TTL=64
Reply from 192.168.0.19: bytes=32 time<1ms TTL=64
Reply from 192.168.0.19: bytes=32 time<1ms TTL=64
Reply from 192.168.0.19: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.0.19:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Documents and Settings\Administrator>

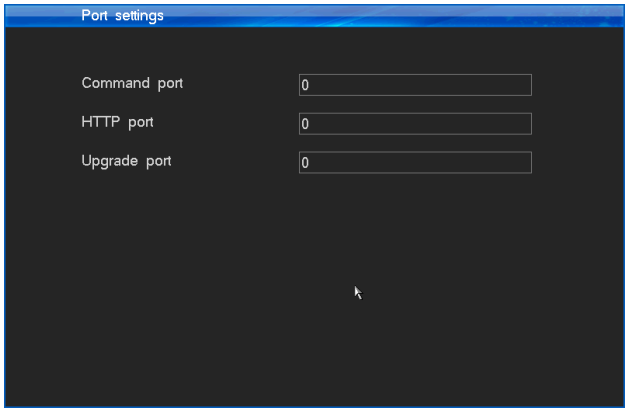
3. Please refer to “Client user guide” for further operation.

2. WAN Operation Instructions

WAN Service Settings

- If there is a fixed WAN IP address that can be allocated to the DVR host, the DVR host can directly access wide-area network, and can be visited after set up IP, subnet mask and gateway.
- The host-setting steps are as follows： after log in, right click mouse to choose the "Menu" button to enter the main menu, then choose "System Settings" ➔ "Network Settings" ➔ "Dial-up Settings" to enter the dial-up setting interface, input the user name and password, and click on the "Link" to make the DVR host access Internet by dial-up. After dial-up successfully, Net DVR will display relevant information. User can input the host IP address in windows IE and visit the host through network. If you want to connect multiple DVRs to wide-area network with only one IP, please refer to the following instructions:

Firstly, enter the host DVR main menu "System Settings" ➔ "Network Settings" ➔"Network Management" to set up the IP, subnet mask, gateway and port. Note: Gateway must be set the same as the mapping router's LAN IP. After set-up, connect the host to LAN to make the network mapping on the dial-up internet router. (Note: The instruction is for TCP protocol mapping).



Through the router mapping: Host network interface settings are as Fig 1: Fig1

Note: The values of command port and HTTP port indicated by red box were 8101 and 81. Users can customize the value of the two ports. After setting and saving, DVR will restart to take the setting into effect.

Take the TP-LINK as an example:

【1】After signing up routers, by choosing "Running Status" icon on left side menu of Figure 2, view the LAN IP and WAN IP address of the routers, such as, the LAN IP address 192.168.2.1, WAN IP address 116.30.141.163.

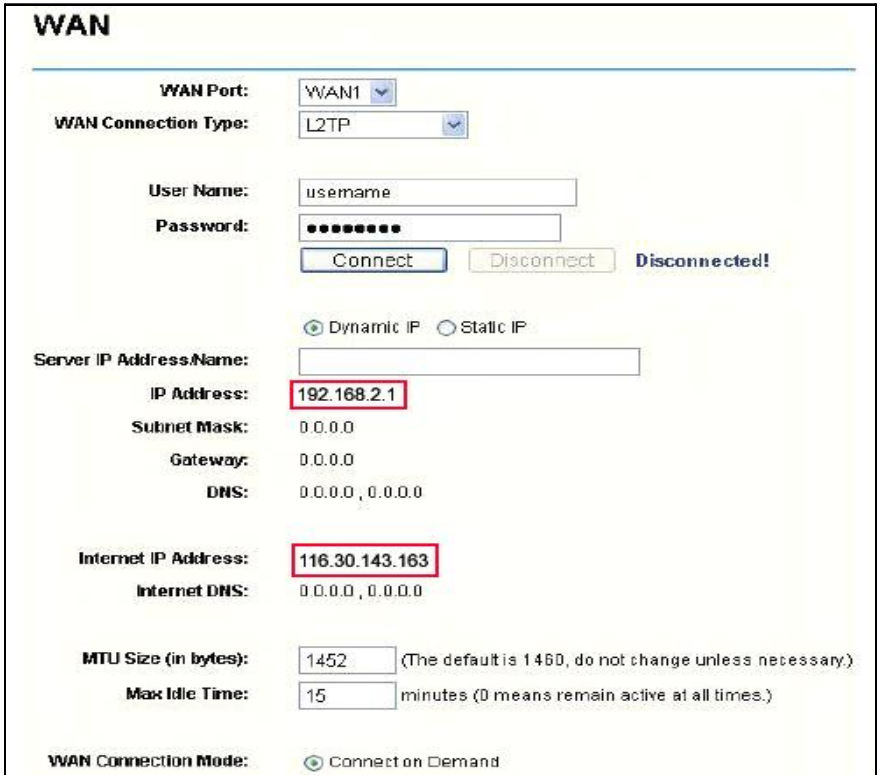


Fig2

【2】Choose the “Transfer Rules” on Figure 2 left menu, as shown in Figure 3, respectively input “command port: 8101”, “HTTP monitor port: 81”, “IP Address input: “DVR host IP address:192.168.2.6”, and choose to enable the agreement “ALL”. Click the “Save” to save the settings.

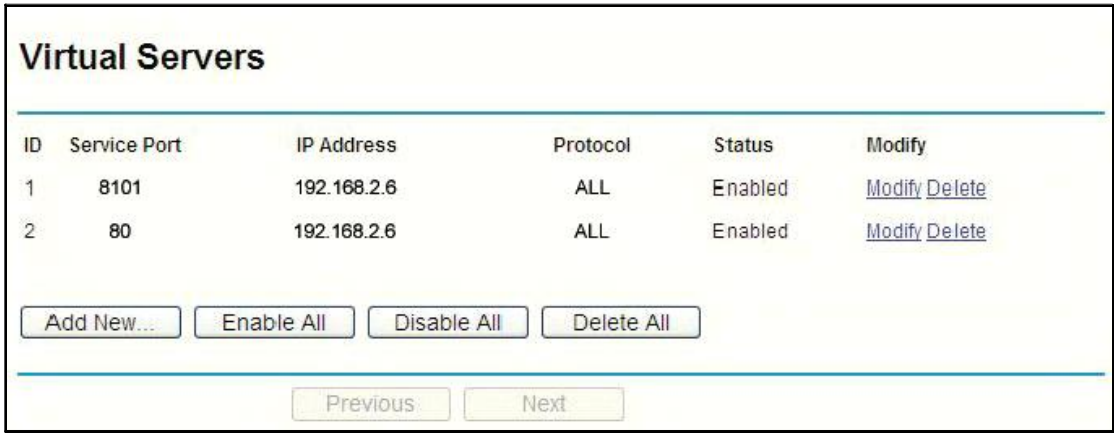


Fig3

【3 】Port Description: The command port is the TCP port of all DVRs communications, and HTTP port is IE browser port.

a、Directly input the WAN IP address (116.30.143.49) shown in Figure 2 , as well as command monitor port, correct user name and password into the client manager, then login successfully to the interface shown as Figure 4.

b、For IE browser, input as the following mode: http://116.30.141.49:http port. When login, input the HTTP monitor port, correct user name and password in the login box to log in successfully to the interface shown as Figure5. Note: between IP address and port number, or between user name and port number, the punctuation ":" must be input.

Fig4

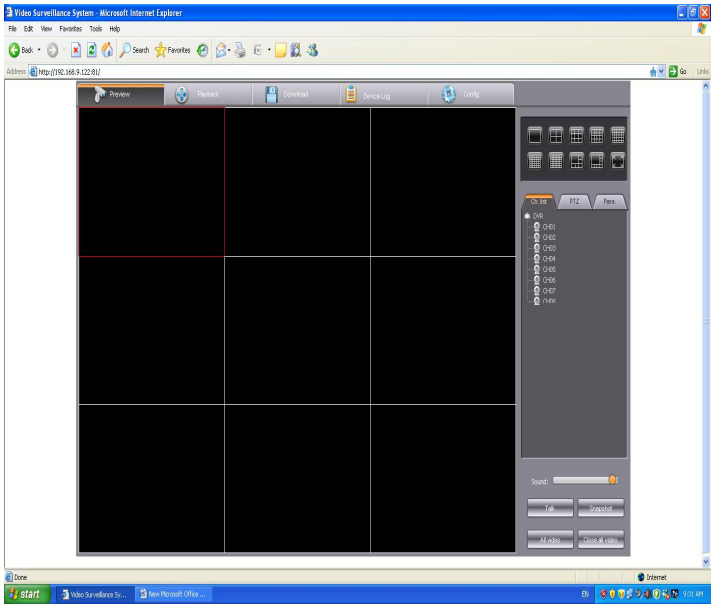


Fig5

Appendix 2: Net DVR Q&A

Thank you for choosing our DVR series products. We will always be at your services. In case you have any difficulty while using the products, please refer to the below frequently asked questions & answers. If you cannot find solution here, or the solution offered here still fails, please feel freely to contact us by our hot line and/or technical support E-mail box. We will make most timely reply to your questions.

Testing Methods:

[1] Replace Method (Replace the power supply and HDD of the DVR).

[2] Minimum Load Method (Get rid of the HDD, video, audio and alarm resource).

[3] Upgrade (Solve some incompatible problems).

Note: Some software problems may be caused by incorrect operation. If you can not make sure the problems, please enter system maintenance menu to run "Factory Setting" option to reset to default parameters.

(A)The problem about rebooting, self testing, system halted.

01：Why the DVR does not start up though power cable is well connected to power source?

01：1. Check if you have turned on the switcher on the back panel. 2. Check if you have inputted the right power password and pressed Enter button.

02：I see the Super DVR logo, but why it stops at self-check process?

02：To detect if the problem is caused by hard disks, please remove all the hard disks and start system again. The DVR can start up without a hard disk. After start up, system will prompt "system does not detect the disk information, whether to continue". Click "OK" button, and the host can engage in normal operation.

03：My system can finally start up but seems to be quite slow. Why?

03：Hard disk error will take system much time on rechecking.

04：Why does my system restart after self-check?

04：1. Check the hard disks if they are in FAT32 file format, if not, change to FAT32. 2. Check Color System setting in Record Parameter menu. In case this setting is PAL, while present video input is in NTSC format, which will cause system restart. 3. Please unplug the network cable, to see whether DVRs run normally, since there are serious problems of the network which may also cause the host to restart repeatedly.

05：Why my remoter does not work?

05：1. Please check if the IR indicator light on the front panel flashes when you make operations with the buttons. If not, please check whether the remote control has run out of battery, or the remote control has been damaged. 2. Check if the front panel is in lock up status. If so, press Login/Lock button and input power password to unlock. 3. Please check if the host software locks the operation. If yes, please input user name, password to login, so to make IR remoter control work.

06：Why system halts at some certain time?

06：In case system halts at some certain time, for example, around 7:30am, please check your electricity system. This problem is mostly happened in factories, when at around 7:30, all machines start and cause power supply in a short temporarily. Try to make the DVR not connect to the same circuit as the industrial machines.

（B）Display Problems

01：Why there is nothing displayed on the monitor or the display keeps shaking?

01：1. Check if the power is on or not. If the power is on, the power light at the front panel should be on. 2. Check the display mode. Refer to VGA/CVBS display switch from the user manual.

02：Why my DVR display images that seems to be interfered, and like water wave shape?

02：1. Please check if the video cable has well connected. 2. Check if there are strong electricity current around the video cable. Please don’t put video cable together with electricity cables to avoid interfering. 3. Please check if the DVR case is well grounded. Only connect the case to ground by the screw on the back panel, while no other points connect to ground. 4. Please check camera, monitor and video cables if they are aging.

03：Why both the live display image and playback image are not showing the true color?

03：Please check if you have set the parameters well. (Please refer to chapter 4.2.1 for details).

04：Why my DVR displays distorted images on VGA monitor or cannot make full screen display?

04：1. Please check if your VGA monitor is well set up. 2. Change your VGA monitor settings till make it full screen.

0 5：Why my DVR system shows disordered color?

05：1. Please check you VGA data line, as well as connection condition between DVR to VGA monitor. 2. Check if the DVR system has overheated.

06：I started my system seeming to be successful, but there was a certain channel displaying nothing, neither caption. Why?

0 6：Please make restore to factory default settings.

07：Why it displays mosaics when playback?

0 7：1. Check the recording parameter setting. If the recording parameter is set too low, it can influence the image quality and cause mosaics. 2.If bad sectors exist in the HDD, it might cause mosaics when playback. Users need to check HDD.